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ART. I.—*History of England, from the Peace of Utrecht to the Peace of Versailles, 1713-1783.* By LORD MAHON. 7 vols. 8vo. Fifth Edition. John Murray, London. 1858.

LORD STANHOPE'S able history is a history of the nation, its wars, and its internal policy. Its heroes are the sovereign and the Ministers, who conducted the administration of the empire, to whom we ascribe our laws and treaties, and the political adversaries, who, by their counterpoise, checked the Government at every step. It has nothing to do directly with the people itself, which either party affected to represent. But the great peculiarity of the period embraced in these volumes is, that, while it forces aside all the laws of history, and offers personal dislike and resentments as acknowledged substitutes for political principles, a profound undertone of public feeling and opinion may yet be traced as a permanent, though apparently only occasional cause, using for its own purposes the private wrongs and schemes of party leaders, and quietly ignoring, or treating as nought, the obstinacy of bought Parliamentary majorities.

The force of public opinion, which has had always a real existence in England, explains what else would be obscure,—the gradual success of Opposition against all the influence of Ministers in the most corrupt of Parliaments. For corrupt it was. Walpole himself was untainted with dishonesty, yet his riotous way of living—his galleries at Strawberry Hill—show what a misty idea persons then had of the distinction of public and private resources. The greatness of the secret service fund, and the continual increase of new and sinecure posts, prove that the kingdom had to pay for the luxury of its recognised rulers. The same age which saw the exposure of Craggs, was scarcely likely to be free from innumerable instances of corruption in the lower ranks of political life,—the more so when we consider the pro-

fusion of boroughs into which the nominees or the scions of rich families were thrust as a provision for life, without respect to their qualifications for a regular and legitimate rise by statesmanship as a profession. Shame, and the intuitive fear of staying in a falling house (though this desertion was itself the occasion of the ruin), at last turned Walpole's majorities into a minority.

The country had an instinct that things were not as they ought to be, though Walpole's government was as good, nay, probably much better than Pulteney's would have been. It was fighting the battle against the opposition of the practice introduced by 1689, to the theory which that event had established. For the destruction of the tyranny of the great old Whig houses, it used the pique and jealousies of the same order. For these reasons, it selected a Whig of the first rank to overturn a system of Whig oligarchy, and overlooked the fact that his patriotism had been directed against his old friend by that friend's ingratitude,—furthermore, accepted his motley band of Jacobites or ejected placemen as leaders in the people's cause; for these reasons, it overlooked his avarice and inconstancy of purpose (not, however, of end), and wept about his sick-bed at Ingestre; for these reasons, Oxford ran riot whenever the professed Revolutionist triumphed; and the leader of Piccadilly was the favourite alike of the City and of the petty farmer. When, lastly, the long conflict ceased, and the champion of the cause had won, what was it that swept off from his lofty pedestal the popular idol in a storm and tempest of popular indignation and contumely? It was not silence about popular social reforms; for a few weeks could not have been expected to have borne these fruits. It was, that in his day of power, and when his decree was absolute, he sanctioned the system, to overturn which he had raised the land. How can we blame men for discrediting the sincerity of the foe of Walpole, who could leave Pelham of Newcastle and Lord Hervey in office!

This national aversion to the *jus divinum* of the Whig oligarchy is the keystone of the history of this famous Opposition. The people did not desire to elevate men of themselves; but they would not allow a small, close body to arrogate a right of co-optation without respect to fitness for office. They were ever ready to seize any occasion of clear mismanagement to utter, in a burst of rage, their protest against the whole system—their suspicions that their representatives were no representatives. Indeed, the absence of social popular cries from the leaders' vocabulary is a curious and disagreeable feature in the history. It imparts an air of barrenness, and an impression of unreality to the whole. Perhaps it was what we had a right to expect. The instrument must be first created: the work is subsequent. But it, at all events,

gives us a fair and well-founded prejudice against the politicians whose policy "was so entirely negative, and removed to the dry arid waste of the high politics," none of whom ever burst out into a proposal of some true measure of reform, some great scheme of education, or modification of oppressive poor laws, or large project of trade. All that they did was to veto, unless on one class of subjects. A war was always a welcome topic, because the Minister loved peace, fearing the financial embarrassments of a protracted contest.

All these champions of Opposition were, after all, no statesmen. Orators in reality they were, who ran all through the scales, from the sublimest tones of patriotism to the hottest blasts of indignation and the stormiest gusts of ridicule. Well might the badgered Minister exclaim, that he feared Pulteney's tongue more than another man's sword! *He* was the Coryphæus from whom all took their tone. He surprised his followers and adversaries with a scope of eloquence which enlarged and rose with the occasion. All his contemporaries, whether friends or foes, agree as to the astonishing compass of his oratory. "He could state and explain the most intricate matters, even in figures, with the greatest perspicuity," writes Chesterfield, who envied, and affected to scorn him, after his death. "He was a most complete orator and debater in the House of Commons . . . for he had arguments, wit, and tears at his command." Even Onslow, Walpole's Speaker, whose position was constantly being menaced by the assaults of Opposition, and who watched a debate only to detect some breach of order in the harangues of his adversaries, was amazed at this man's eloquence. "He had the most popular parts for public speaking that I ever knew; animating every subject of popularity with the spirit and fire that the orators of the ancient commonwealths governed the people by; was as classical and eloquent in the speeches he did not prepare, as they were in the most studied compositions; mingling wit and pleasantry, and the application even of little stories, so properly to affect his hearers, that he would overset the best argumentation in the world, and win people over to his side, often against their own convictions, by making ridiculous that truth they were influenced by before, and making some men to be afraid and ashamed of being thought within the meaning of some bitter expression of his, or within the laugh that generally went through the town at any memorable stroke of his wit." Now he had an occasion for putting in practice the lessons he had taught himself at an earlier period. That he had not commenced at once great orator, he found no bar to strains of continuous and impassioned invective; but the habit of being always ready and able to speak to the point, was of essential service in the per-

petual guerrilla warfare which, as leader of his Majesty's Opposition, he had to direct. The quality of his style, which his enemies called "miscellaneous incoherence," was reckoned by his friends, and even the judicious among his adversaries, as the great merit and triumph of debating.

The great campaign, fought out between 1725 and 1745, began in the former year with a fierce onset, by Pulteney, on the increase of pensions, which had exhausted the civil list and necessitated an appeal to Parliament. "He was not surprised," he said, "that some persons were so eager to have the deficiencies of the civil list made good, since they and their friends had so great a share in it." Up to this time he had preserved the semblance of amity with Walpole and the Crown, while retaining his place of Cofferer. He even, on the third reading of the bill for paying the King's debts, voted with the Administration; excusing his seeming inconsistency by the plea that, while he believed it the duty of his office to resist the growth of so pernicious a system, he could not gainsay the King's argument, that the Opposition were hindering him from being an honest man. The plea was a strange one. It is hard to accredit a man for honesty who throws the burden of his debts upon other persons. But, even at this advanced stage of our history, the distinction between the sovereign's private and public character was but partially recognised. The Minister, who had been chiefly assailed, did not see much merit in his opponent's inconsistency. After a feeble overture towards reconciliation, from the side of the Court, Pulteney was dismissed into hopeless opposition.

Yet it seemed not so at the time. The King was old and infirm. There could be little doubt that the Prince must soon succeed, and as little that he would prefer the services of men who made it the business of their lives to flatter him, to a Ministry which rather embittered than sweetened the relations of St James's and Leicester House. The King died; Walpole's proffered help in drawing up the proclamation of the accession of George II. was coldly rejected; and Pulteney was expecting hourly a summons to Court. It never came. Caroline, who had ever veiled an absolute predominance over her husband's mind under the appearance of unquestioning obedience, had only felt resentment at the compliments and professions of attachment which she shared equally with the Prince's mistress. Bolingbroke and, through him, Pulteney, had been beguiled into a one-sided caution—a policy which might have suited the Courts of Louis or of Orleans, where it was learnt, but which, to the credit of England, only led to disappointment here. Yet more, the house of Brunswick, with many great faults both of head and heart, a blind selfishness and dangerous patriotism, which was

like treachery to their adopted kingdom, had yet an almost preternatural instinct of self-preservation, which taught them that 1689 and the Act of Settlement had made them sovereigns of England. It was mere envy and jealousy which carried four heirs to the throne of England, in succession, into an undutiful and almost revolutionary opposition; yet this very conduct usurped the fruits of profound sagacity. It infused a tone of apparent loyalty into the spirit of party, and reconciled a powerful minority in the nation to what was certainly the government of a section, by the natural expectation, that, with their royal chieftain, they must succeed to that despotism in the State which now crushed their efforts. But, with the prerogatives, those chieftains regularly assumed the hereditary prejudices of the station. The liberal, almost republican tenets, which, never touching the other distinctions of rank, wasted all their strength on disproving the absolute supremacy of the head over the scions of the reigning family, lost at once all their charm. The jealousy of prerogative was roused by them; distrust and jealousy of those who must, eventually, succeed to the station he had quitted, were bequeathed by the last occupant, like an hereditary genius of the Palace, to the new one. His necessities served to enlist him on the old side. The feelings of the ruling caste did not change with the demise of the Crown; those of the owners of pocket boroughs, of the great Revolution houses, who could extort, and need not beg, a garter or a gold stick, remained unaltered. With no majority in the Lords, what would be the lustre of St James's? with a minority in the Commons, where would be the debts of the civil list—where would be the civil list itself? Opposition, and the writers in the *Craftsman*, were exasperated when the news came that Spencer Compton, the King's confidant, had been allowed to seek the aid of the late Minister's experience in drawing up the proclamation of the accession; that Caroline had accepted Walpole's pledge to secure her an income of £100,000; that Swift's presents of Irish cambric were neglected, Gay insulted with the offer of a gentlemanushership, and Pope and St John forgotten. They exclaimed loudly at the perfidy of princes, and clamoured against the inconsistency of Ministers for condescending to serve one whom they had openly scorned and ridiculed—who had as openly reprobated them. Nevertheless, we find that they were not a whit behind their adversaries in adapting themselves to the new state of things, or rather, in forgetting that it was a new state.

The policy of Walpole was thoroughly opposed to the spirit of the nation and the times. He was the first great Conservative Minister in a period of general progress. Yet it was not in the general tone of his domestic administration that he suffered this

bias to appear. That was liberal and enlightened. By his great Chancellor, the Earl of Hardwicke, equity was built up into a science; the laws were ably administered, and the taxes so apportioned as to oppress no branch of national trade. The Excise Bill even went a step farther. It was a daring, but wise, economical measure, and one, in promulgating which he showed a patriotism superior to his usual caution. But, as we are told by Clarendon was the case in the reign of Charles I., the very prosperity of the realm left men more at leisure, and infused into them more of courage and spirit to criticise and censure deficiencies. On this occasion, as on that, whether rightly or wrongly—we suspect the former—they imputed their good fortune to the energy of the nation, just recovering from the anarchy and confusion of the Revolution, and now first beginning to reap the fruits of that event. They were not grateful to the statesman who, for his own tranquillity, secured them the interval of repose which their exhausted strength needed; they were rather indignant at him for his presumption in constituting himself interpreter of that event, and refusing to acknowledge its natural consequences. Here was his Conservatism—the Conservatism ever hereditary in the Old Whigs. He fully allowed the changes introduced by 1689; he conscientiously intended to govern according to the spirit of these changes; but he seemed to forget the period which had elapsed, the acquiescence of the kingdom practically, if not altogether theoretically, in the established order; he wanted the genius to make himself Minister of the country, rather than of a party, and to ignore the very existence of a doubt of his King's title.

By a confederacy of great houses, the Revolution had been designed and carried out. It had been watched over, and developed by the House of Peers. The popular will was doubtless consulted throughout; but the Revolution was not popular, in the same sense with the French one of 1789. The instruments of the national decision were a comparatively close and limited body. During that long period which followed the immediate outburst, when the swell of the storm had not yet subsided, the same instruments had had of necessity conferred upon them the obligation and the right of administration. The country at large acquiesced in this vague general representation. Hence an exclusive respect for the names and counsels of the houses of 1689, the nobles who could control each his half dozen or dozen votes in the Commons; or the great merchants, Bank directors and India House directors, who could buy up whole constituencies, and discount Government bills: hence that universal and regular system of corruption of independent members, natural to one who looked not beyond the vote, and who did not feel

the responsibility of the Commons to their constituencies: hence, finally, the disposition to underrate the genius of a Pulteney, aggravated by the sensibility of office into suspicion and jealousy of a spirit so impatient of dictation and fortunes above a place, and into hatred and spite at an affectation in him of liberality and democratic sympathies, originating with, he knew—continued, he believed, in pique and resentment; and, finally, at his treason to the hereditary traditions of Whiggism, in thus flattering and cringing, as he deemed it, to the passions and opinions of a mob.

He was right in his appreciation of the motives which had primarily carried Pulteney and Wyndham into an adoption of these two principles, or rather two aspects of one principle, a national system in lieu of a government by alternately predominating parties, and the accountability of Parliament to the people. He misjudged them from want of the capacity of sympathy, when he applied this same explanation to all their future manœuvres. He did not understand that opposition, seemingly so hopeless, could not possibly have been sustained without some consciousness of rectitude and patriotism. Not a single one of those antagonists of the Whig section, from Pulteney down to Pitt, but had been driven into rebellion by neglect or oppression. It was natural for him to suppose, with his bluntness of perception of the contagious influence of genius, that, if the greatest in the adverse ranks had ranged themselves there from these low motives, it must be in the power of the absolute disposer of all patronage and all the sunshine of the Court, by loosening or tightening the reins of his domination, to set the bounds at pleasure to the number of his enemies. The gathering, centralising power of a few men of eloquence and fervid enthusiasm, however interested, all against himself, and of the pressure from without of public opinion even upon the peer of Parliament, the nominee of some great lord, or the merchant-purchaser of decayed market towns, entered not into his calculations.

The nation was right in ranging itself around the leaders of Opposition. Indeed, no great and permanent agitation has ever arisen without some, and that a powerful cause. The majority of these leaders against Walpole were men of sordid ends; but we do not condemn them because of the principle they asserted, whatever their reason for adopting it; on the contrary, it is the utter neglect of it, as soon as they had passed the threshold of the Cabinet, which is the evidence of their disloyalty. The principle was really a popular one, and the nation cannot be blamed for applauding its upholders. Nor, again, were all the champions of the same stamp. Some among them were men of lofty purpose, in spite of this original taint in their policy,—men

who believed most fully that they were saving their country by harassing the Minister. And so they were in some degree ; only, when politicians are led to detect the public foe in their own private adversary, not merely is there danger of a suspicion in by-standers of their candour and sincerity, but something of personal and low selfishness can scarcely escape blending with the whole stream of their arguments and measures.

Pre-eminent above them all for purity of character, and fealty to his own conscience, stands Pulteney ; for Wyndham, by his party tenets, and his conduct during the last four years of Queen Anne's reign, was placed beyond the verge of the temptations of office ; and political purity is not the sort of phrase which we should dare to apply to the grand heroic soul of Pitt. The very blemishes in Pulteney's character have a certain picturesqueness which perhaps only adds to our feeling of interest : defects there certainly were, and in profusion. It was not only filial resentment which made Horace Walpole ascribe all the inspiration of his writings to "ambition and acrimony,"—not only jealousy of superior power, talents, and honesty, or the passion for epigrams and point, which led Chesterfield to declare, in his exaggerated style, that "resentment made him engage in business ; that he could equally detect and PRACTISE sophistry ; that his breast was the seat of all those passions which degrade our nature, and disturb our reason ; that there they raged in perpetual conflict ; but avarice, the meanest of them all, generally triumphed, ruled absolutely and most scandalously ; that nothing exceeded his ambition but his avarice." Party feeling exclusively did not prompt Speaker Onslow's criticism on "the mixture in him of such natural defects and weaknesses, that no time, I believe, can produce an instance of a man of so variable and uncertain a mind, who knew not that he was so, and never designed to be so." Much of all this censure was true. He was ambitious and acrimonious ; he even condescended to be sophistical. He was avaricious. He could be capricious in conduct, and was ever so in temperament. Yet, with all this, it was the height of folly or prejudice in Onslow to write, that "they who knew him best wondered at the popularity he once had." "An orator and debater the most complete in the House of Commons, with argument, wit, and tears at his command,"—"animating," according to the testimony of the very same man, "every subject of popularity with the spirit and fire that the orators of the ancient commonwealths governed the people by," how could he have avoided being popular !

He was avaricious, and, in little and business matters, economical even to monomania. Many will remember how, we are told, the coach and six, outriders and all, were suddenly

checked, to allow the great and compassionate Lord Bath time to grope in his pocket for a halfpenny to bestow on a decrepit old beggar. The haggings of the owner of more than a million with his ward Coleman about a few pounds for tutor's fees, and earnest advice to look about for second-hand law books, are notorious; yet he could be nobly generous to a friend, while he esteemed it a reflection on his understanding as a man of business to yield a "point in the way of bargain." Chesterfield's reflections on his ruling vice, it seems, arose from his refusal to sell him some frontage land in Hyde Park for less than its market price, and are somewhat out of place from the great noble who bequeathed his mistress, the mother of his son, £500, as some "small" (small indeed!) "compensation for the injury he had done her." That Pulteney had not been heroic or eccentric enough to disclaim a legacy of the Bradford estates, was converted into another grave charge against him. But never was a demand made upon his liberality, for public objects, or his feeling of equity, in vain. Bishop Newton, who knew him perfectly, tells us, that he was a constant and generous patron of literature; that many youths were brought up and advanced at his expense; that "the charge of gaining intelligence, and of printing and publishing, and the like (for the party), was almost all his own; and there were very few who assisted now and then with so much as a subscription of five guineas." A man who, we learn on the evidence of Pearce, yearly bestowed more than a tenth part of his whole income in charity, and who took upon himself the payment of the enormous debts of his deceased son, Lord Pulteney, voluntarily and without liability, could hardly have been the mean, ungenerous, even dishonest miser that family enemies and envious companions delighted to prove him. As a man of business, he insisted upon having his own. The West End might be thronged with whispers of a clever bargain or a piece of minute economy; but the nation at large only knew him as the millionaire and economist, who sternly rejected all the lures of sinecures and pensions,—who, from the time when first he entered public life, had always subscribed to every patriotic loan, however hazardous,—who had accumulated wealth that he might lavish it on popular objects. They were ready to sympathise with his indignant outburst at being contrasted for a "sparing, scraping nature," with the magnificence and prodigality of the statesmen of the age: "Dost thou call the profusion of the public treasure on a worthless crew of pimps, spies, projectors, and abandoned scribblers, for thy own secret service, instances of personal generosity? At this rate, Catiline was a man of a frank, liberal heart."

His enemies reproached him with "outrageous bursts of sudden passion, with an *affectation* of good nature and compassion;"

but even they could not deny that his fierceness of tone "was supported by great personal courage," and that, "perhaps, his heart might feel the misfortunes and distresses of his fellow-creatures." His friends could add, that he was religious in an age when scepticism was fashionable, and moral in a period of systematic viciousness; that in private life he was "so familiar and engaging, that you could not be with him half an hour, but you felt yourself entirely at ease;" that he never forgot the ties of school friendship, or, in his triumph, gave the reins to his thirst for vengeance; that he never condescended, to low intrigues to embarrass his adversary; (the proffered services of a man skilled in opening and re-sealing letters he rejected with the utmost scorn and loathing, though the Treasury did not;) that, in fine, in all the relations of life, "he was truly a great, and wise, and, what is more, a good man." Now, while leaguings with men of all denominations in politics, he had never deserted his ancient pledges—still spurning at alliances with France, and urging confederacies with the Empire and Holland—never, in his anger with the sovereign, threatening sympathy with the Jacobites—the nation could judge for itself from his votes and speeches. These were all popular qualities, more than enough to fit out a hero of Opposition. Something, it is true, was wanting—a defect which his haters instinctively detected, guided by their universal scepticism as to the existence of true patriotism. With many brilliant endowments, he had not the profound moral energy which makes the original and patriotic politician.

His powers were called out, and had ample scope for display, after the accession and political treachery of George II. The war was war to the knife. But the fight was sometimes a running skirmish; at three epochs it developed itself as a pitched battle. These were the pamphlet conflict of the year 1731, the debates on the Excise Bill, and the Right of Search and Convention with Spain, all connected by a continuity of sharp-shooting. In 1725, Pulteney had declared that he "was not surprised some persons were so eager to have the deficiencies of the civil list made good, since they and their friends had so great a share in it." Again, in 1726, he had moved for a statement of the public debts, "with no other view than to give that GREAT MAN an opportunity to show his integrity to the whole world, which would finish his sublime character." In 1727, the same charges are rehearsed. The sinking fund, he argued, was nothing but a convenient cloak for embezzlement of public money. It was a popular fund, which the nation was ever ready to keep supplied, and which the Ministry had ever at hand as a supply for their own necessities. Were there ever a deficiency, there were ways and means. They

had nothing to do but borrow on the credit of some other fund. Now, Gould and Walpole staked their credit to prove that by this fund the national debt had been actually reduced; and what was it that they did succeed in proving? Why, that of the £6,648,000 by which the debt had been reduced, three millions had come from a late Parliamentary grant, and the rest been raised on the credit of the civil list. It was a pretence, like the secret service funds, which "made Parliament a mere form, and screened corrupt Ministers."

The *Craftsman* appeared in 1726, with Caleb D'Anvers, a lawyer of Gray's Inn, as editor, but really under the direct auspices of Pulteney and of Bolingbroke. There, and in the Commons, the Ministers had been long denounced in language which no one could misinterpret. It was in 1731 that, from the narrow boundaries of the Treasury Bench, where the former and Walpole both sat as Privy Councillors, began to be bandied to and fro the cries of "traitor to his country," and "factious demagogue." Up to this time, notwithstanding Pulteney's ejection from office, and bitterness against the King and Queen, whom he accused of treachery and ingratitude, the road had not been absolutely barred to a reconciliation. Overtures were even made by Queen Caroline, some of whose especial favourites, as Bishop Pearce, were friends of the popular champion, on the terms of a sort of independent coalition between him and Walpole. They were put an end to, it is true, by the assertion of the former, that he would never join a Cabinet comprehending his rival. Still, he had scarcely at present set up the standard of Parliamentary rebellion, and thrown himself upon the country. His power was sufficiently great in the Commons. The temptations of pamphleteering drew him into a position of pronounced and impracticable opposition both to the Cabinet and to the sovereign.

Perhaps fearing that, without some worthier champion than his raw recruits from the "Dunciad" battalions, and his "Turkish army of scribblers," the pressure from without would tend to induce a fear within the walls of St Stephen's itself, that his cause was undefended because indefensible, he authorised Sir William Yonge to compose his "Sedition and Defamation Displayed." In the dedication prefixed to the patrons of the *Craftsman*, was drawn the picture of a perfidious and capricious ingrate, envious of the wisdom of his benefactor, made by nature indeed to be loved, but with a pervading taint of restless, unprincipled selfishness,—a traitor, alike, to the fidelity of private intimacy and to the dynasty of his choice; lastly, even degraded into a writer on the staff of the *Craftsman* and *Fog's Journal*." Pulteney never attempted to restrain his passion. He even seems to have been persuaded by the flatteries of the popular party,

against whose enemies it was usually called into play, to deem it a virtue. He was the more bitter now, that rumour ascribed the authorship of the paper to a former friend and protégé (the persecuted Lord Fanny (Hervey) of Pope's scurrilous satire). He replied with all the virulence and furious sarcasm which terrified his adversaries in the Commons, and which flies full in the face of his friend's criticism of the authors of the *Craftsman*, that "they preserved a decency to which our modern papers are strangers, having better seasoning to make them palatable than personal reflections." With scorn Pulteney hurls back the charge of abandonment of old friends, and denies that he had ever forsworn Whig principles. To the reproach, that at least he had deserted his leader, he retorts, "What right had your patron, from character, fortune, or abilities, to erect his standard in a joint administration!" Hervey was brave, though puny and sickly, and freely and spontaneously—spite of the malignant insinuation of the author of "Pulteney's Life and Conduct," that Walpole stirred him up, by false misrepresentations of facts, to challenge his libeller, "in hopes that the point of the young gentleman's sword would despatch his rival"—challenged him in a cause with which he had properly nothing to do, but which Pulteney's language prevented his withdrawing from. The result was a meeting in Kensington Gardens, a slight wound given and received, but no reconciliation. Ten years hence the conviction of the impossibility of removing Hervey from his post at Court, was one of his sorest reminders how much more difficult it is to construct a Ministry than to overthrow one.

The controversy did not end here. In the *Craftsman* of May 1731, Bolingbroke (Oldcastle) vindicated his confederate from the reproach of treachery, imputed by Yonge. "They" (*i.e.* the Whigs) "have left him, because they have left the principles they professed. He left neither. He inveighs against public profusion and private corruption. He combats both with a constant inflexibility, which might have done honour to a Roman citizen in the best days of that Commonwealth. . . . They have left both him and virtue." It was not spite which moved him to this course, but "the dangerous ambition, insatiable avarice, and insolent behaviour of the Minister, exaggerated by the remembrance that to Pulteney he owed his elevation. "And which," he proceeds, "of the two was the more likely to have been actuated by private interest? Whose circumstances required most an increase of wealth? Which had given greater proofs of vindictiveness of temper, of avarice to gather, and profusion to squander? The one laid down a good place, and forced Ministers to take another away; and, if I am rightly informed,

it will be hardly even in the power of the greatest man in England, to persuade him to accept of a third. There is the ambition of doing good, and of receiving the reward in fame. If any man in one age and country hath reason to be satisfied with his success in the pursuit of this ambition, it is the gentleman of whom we speak." Forthwith appeared in answer, "Remarks on the *Craftsman's* Vindication of his two honourable Patrons," full of personal abuse of the Opposition leader's conduct in all the relations of life.

Pulteney thought he recognised in the topics of this paper, if not in its style, the hand of his prime rival, and writes to his brother-in-law, F. Colman, then Minister in Tuscany, that he must now "dip his pen in gall," to answer a pamphlet ascribed to Walpole himself.

Pulteney's share in the war of pamphlets of 1731 excited a storm of clamour against him. The invectives of really anonymous writers, of course, were pardoned, being looked upon as merely tokens of PARTY STRIFE, bearing internal evidence of their untrustworthiness. Lord Bolingbroke, besides that his charges were more general, and aimed rather at base principles than base acts, had suffered so much as to have something like a privilege and license of virulence. But for Pulteney, brought up at the feet of the old Whig chieftains, thus to turn against them,—for a leader in an exclusive society to appeal to the crowd without, and to betray private and public confidences, was a strange crime indeed. Even the heads of his league, who profited by his vehemence, distrusted him, and afterwards were as eager in declaring that they had never been "the dupes of his simulation and dissimulation," though acting with him for their country's good, as he himself was, in so paradoxically denying, as we have seen, that ever he cared for Walpole. However, the weight of his talents, his wealth, and his position, preserved him from open condemnation. He himself had no wish to throw himself, in truth and altogether, on the people.

It would have been strange, indeed, had not these pamphlets excluded all hope of political union or compact. It seems almost as strange, that the consciences, or the susceptibilities at all events, of the politicians of that period should have been so callous as to have enabled their general habits of intimacy to survive such shocks. Probably, the thin veil of the anonymous authorship, or the pseudonym, helped just to make it possible, with the additional aid of noble Sir, and "honourable gentleman," as *noms de guerre*, to keep public and private relations distinct.

Certainly, the contrast of the exquisite bitterness of these denunciations with the occasional relations between the givers and takers, infuses a curious appearance of the artificial and the

unreal into the history of the conflict. We cannot avoid comparing sometimes this violence of blast and counter-blast with the ponderous wit-tournaments of two Middle Age Court fools, or the more material struggles of the clown and harlequin on a stage at a fair. We read of an interchange of calls and civilities, chats on the Treasury bench, and good-humoured bets, which jar with epithets and imputations unequalled in the cryings out for vengeance upon a Strafford or a Danby in the previous century. The details of such a state of society, picturesque as they may be, are rather painful. Between the sincere wrath of a nation, which was, or certainly believed itself misgoverned, and the easy business tone of the statesman, who, while he echoed or gave expression to that indignation, could tranquilly transact private negotiations with the public enemy about exchanges of leases for fee-simples, or be a party to a bandying of compliments, there is too great an interval. The generosity of a rival, who could beg and accept a deanery for his friend, Zachary Pearce, from the Minister, and urge upon the new dean the obligation on him to employ all his electioneering influence for his patron, was sincere, and even romantic; but, at the same time, when that Minister, who was to be thus supported, had been so often styled a traitor and perjured "wretch," it implies a strange perversion of language, nay, of principle.

In fact, the hostility rested upon a basis of personal emulation and rivalry, and of a certain real antagonism of principles in the high atmosphere of international politics. No great social questions were in debate. Walpole was too clever, and, indeed, too constitutional a Minister, to throw occasions for attack in the way of Opposition, by any measures affecting directly the citizen's personal liberty. He recoiled from the Excise Bill, on account of the pretexts it afforded for such a charge. The 12,000 Hessians had already been made too good use of. The very forces which his adversaries compelled him, at a future period, to levy for the Spanish war—into which they drove him, and which was to issue in his downfall—were made a fruitful source of calumnies. Like the Athenians with Philip, *ἀπὸ τῆς πλεονεξίας ἐχόμενοι*, they were ready to seize hold of any opportunity indicated by him; they did not comprehend the utility of social badges; they did not understand what they should be, because they neither felt with the people sufficiently to detect deficiencies in their condition, nor observed the obligation their power laid them under to attempt to remedy them. Notwithstanding the personal character of the feud—so personal, indeed, as to make the personal and the political opposition one—and the general concurrence of the nation at large in the contest, the champions who actually fought on either side were a distinct caste from the

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The King Enraged against Pulteney.

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rest of the people. They were like knights in the dark ages, self-appointed to combat in behalf of a woman or a priest. Not to speak of the rest—sordid politicians for the most part, the lowness of whose motives was not disguised from their clients, the people, themselves—even Pulteney, with all the generosity and fervour of his natural temperament, did not struggle in behalf of an oppressed kingdom. Certain principles were his protégés, and he levelled his lance against their supposed assailers. The consequence was, that there was ever a sort of under-current of fellow-feeling, the result of equality of class and society, and a thought of responsibility to the bar of that society to which they both belonged, which rendered the enmity itself somewhat abstract and artificial. They styled their adversaries (and Pulteney, at all events, sincerely believed them such) knaves and robbers. They had no right to wonder afterwards, when allying themselves with the same men, that the nation judged them convicted, either, formerly, of the shame of interested and self-conscious calumnies, or, latterly, of gross and corrupt treachery.

Whatever might be Walpole's scepticism as to Pulteney's sincerity in his pamphlets, he despaired now of reclaiming him as a political associate, and foolishly resorted to his favourite "thorough"—that happy phrase of Lord Strafford's—and, for the sake of example, turned him into a martyr. The King himself was equally exasperated. All that the other had revealed about Walpole's language on the reconciliation of the Prince with the late King, was perfectly true; but it was a most unpalatable truth. George II. had quietly swallowed the feeling, that his Minister had once despised him, perhaps did so still. He could not do without him, or he would have had Compton; and now here was William Pulteney informing the whole world of the opinion conceived of the monarch by so sagacious an observer as Sir Robert, and, besides, thrusting him into the disagreeable predicament of having to choose between sanctioning that opinion, by retaining about him the person who had formed it, or, which was preposterous, dismissing the friend of Hanover and the master of finance. He was, at all events, decided upon avenging himself for the dilemma on the author of his perplexity, and readily fell in with his Minister's policy. Pulteney was forthwith converted from the routine dignities of a privy councillor, and *custos rotulorum* of the county of York, into a popular idol. It was to him a real gain; but he does not seem to have altogether appreciated it, and became yet more determined on vengeance.

In 1733, an opportunity offered for bringing to bear upon the Commons, impregnable to unaided domestic eloquence, the pres-

sure of external opinion. Walpole, who was certainly a clever and economical financier, had planned the conversion of the customs into duties of excise, in the hope of augmenting the revenue, preventing frauds and smuggling, saving the disbursements on the preventive service, and simplifying the collection of the tax. The imposts were never meant to be extended to necessaries or raw materials, and he intended to apply the scheme, in the first place, only to one or two commodities. As a bribe to the House, he offered to do away with the land-tax, the bugbear of the country gentlemen. The project got wind, and, though one which, later, recommended itself to Adam Smith, was denounced with all that fury which the threat of its importation from Holland had once before in our history raised, in the reign of Charles I. The necessarily inquisitorial powers of the employés has always rendered it, notwithstanding its economy, most odious to England. Before it was broached in Parliament, it had been compared out of doors to "a monster feeding on its own vitals," or "the Trojan horse, which contained an army in its belly." The *Craftsman* led the chorus of execrations, and its attacks were republished weekly, in the form of "Arguments against the Excise." The Opposition sought to force the Cabinet into bringing forward the bill while the whole kingdom was in a ferment, and every town was menacing or encouraging its members. Pulteney even dragged it into a debate on alienating part of the sinking fund. "There is another thing," he suddenly broke out, "a very terrible thing, impending! A monstrous project! yea, more monstrous than has yet been represented! It is such a project as has struck terror into the minds of most gentlemen within this House, and into the minds of all men without doors, who have any regard to the happiness or the constitution of their country. I mean that monster the Excise! that plan of arbitrary power which is expected to be laid before this House in the present session of Parliament." Wyndham seconded this assault, discussing, as an abstract question, "whether we should sacrifice the constitution to the prevention of frauds in the revenue." Sir John Barnard, Opposition's Chancellor of the Exchequer, without whose aid Pulteney confessed he could scarcely have competed with his rival in finance, spoke to the traders' detestation of the bill. Walpole reserved his defence for his motion for leave to bring in the bill. "Such a scheme as a general excise, he denied had ever entered his head, or, for what he knew, the head of any man with whom he was acquainted. His thoughts had been confined solely to the revenue arising from the duties on wine and tobacco." His great argument from the frauds inseparable from custom dues, was met by the bold assertion,

that losses from this cause were rated, by the Commissioners of Customs themselves, at a sum of but £.30,000 or £.60,000 a year. To his details of the generous intention of Government, should the bill become law, to give up the land-tax, not to speak of the income now accruing from forfeitures and fines, Pulteney rejoined: "The honourable gentleman was pleased to dwell on the generosity of the Crown, in giving up the fines and seizures to the public; but, in my opinion, it will be but a poor equivalent for the many oppressions and exactions which the people will be exposed to by this scheme. I must say, that he has been of late mighty bountiful and liberal in his offers to the public. He has been so gracious as to ask us, Will you have a land-tax of 2s. in the pound, a land-tax of 1s. in the pound, or will you have no land-tax at all? Will you have your debts paid? Will you have them soon paid? Tell me but what you want. Let me but know how you can be made easy, and it shall be done for you. These are generous offers; but there is something so very extraordinary, so very farcical, in them, that really I can hardly mention them without laughing." Again, Wyndham seconded the attack led by Pulteney, and threatened the Premier with the fate of Empson and Dudley. In his reply, Walpole sarcastically retorted, that he did not see how the punishment of the revivers of obsolete laws could be adapted to the mover of what was represented as a dangerous innovation, and gave his Whig antagonist sneer: "I know that my political and Ministerial life has been by some gentlemen long wished at an end; but they may ask their own disappointed hearts how vain these wishes have been."

But neither his arguments, nor his proffered repeal of the land-tax, could save the project. The members were intimidated by their constituents, and even by a vast mob which thronged all the avenues to the House. Inch by inch the ground was contested, and the Administration saw its majority dwindle from 61 on the first to 17 on the third division. The country was in a state of agitation which even the callous Minister could not blind himself to. His declaration against the assemblage at the doors as "sturdy beggars," spite of the interpretation he put upon his words, as meaning nothing more than petitioners, was made a gathering cry against him. He was too cold a politician, too great a lover of power, to sacrifice what he thought sober realities to the vision of economy and reform. He summoned his colleagues, and told them, that, "if their resolution was, as it seemed, to proceed with the bill, he would instantly ask his Majesty's permission to resign; for he would not enforce a tax at the expense of the blood which must, in the present state of popular inflammation, be shed." Great were the rejoicings of the large

towns, where the scheme gave a serious blow to Walpole's old popularity with the trading interest; the Monument was illuminated; Oxford ran riot. "The night that the news came here that the Excise Bill was dropped," writes the Rev. Mr Meadowcourt to H. Walpole, "bonfires were made, moppets with stars and blue garters were burnt, and the old cries of Ormond, Bolingbroke, King James for ever, revived."

Walpole could not help dissolving and appealing to the country, with the cry of "no excise" against him, in the midst of a storm of popular fury. The result showed how incomplete was the representation, through the influence of Government and borough-mongers. The new elections gave Ministers an assured majority, and all the aspirants after employment were in despair. Bolingbroke withdrew for a season to a noble mansion in Touraine, and the delights of the chase in the Royal Forest of Fontainebleau. The famous peroration of the rival of his school-boy days on Wyndham and Bromley's motion, unsympathised in by their Whig allies, for repealing the Septennial Act, depicting the character of the mock patriot, the seducer from their loyalty of generous souls, like that of Wyndham, "ungrateful to the Minister who had befriended him, his King who had pardoned him, the intriguer in every Court he visited, void of all faith and honour, and betraying every Minister he ever served," had not so much terrified him with the implied menace of a second bill of attainder, as made his Whig associates ashamed of so close a confederacy with a convicted traitor to the House of Brunswick. His own account attributed his retirement to general dejection, while Pulteney ascribed it to a love of display, and a prodigality which had exhausted his moderate means. These might in part be motives; the chief undoubtedly were, as hinted by himself, a want of sympathy with the chiefs of Opposition, especially Pulteney, who was as incapable of submitting to dictation, as was the other of allowing an equal. But the despondency was general in the ranks of the party, and natural, in the disappointment of their hopes, after they had been wrought up to the impetus of the assault. In the irregular, but most interesting correspondence between Swift and Pulteney, we have evidences of this depression.

Pulteney himself had peculiar matter for dejection. With a great league, of which he was captain—after the death of his cousin, Daniel Pulteney, a deadly foe of Walpole on account of that Minister's estrangement from Sunderland, his patron, and of Mr Watts, his right hand and his left, as he called them—he had no staff in whom he could confide. The temper of society, and the nature of political confederacies had changed since the time when the "Kit-Cat" was recognised by the party as an irresponsible Council of Ten, with an initiative on all public

measures. His followers themselves were but loosely knit together, and still less bound to their leader, whom not a few hated as a Whig, and many suspected because of that popularity which they had not, and affected to despise as only courted by a radical and demagogue, but of which they were jealous. He was now half alienated from St John, whom the contrariety of their moral sentiments, and the similarity of some of their intellectual endowments, had always led him to mistrust, but whom the influence of Daniel Pulteney had induced him to league with; and he could no longer count upon the powerful services of his pen. Ill health, besides, was operating upon him; and a fit of sickness, which resulted in attracting to him, he writes, "the attacks of five eminent physicians for five months together," at the end of the year 1736, had, in the summer of the same year, reduced him so low as to make him receive overtures of civility from the Court with civility, and display to Horace Walpole, sen., at the Hague, a lowness of spirits, which, to the latter's hopeful eyes, seemed rather to result from his being dead-hearted than sick in body.

His party had no right to complain of its fortunes. Its onset in the last Parliament had been withstood, it is true; but Government's victory was one of those which are virtual defeats. The rottenness of its bulwarks had been discovered, and many had to be thrown over, and now swelled the height of the enemy's mound. Lords Chesterfield, Burlington, Clinton, and Marchmont, with many Commoners, were, for their agitating against the Excise Bill, turned out of their posts, at Court and elsewhere, with circumstances of contumely which drove them thirsting for revenge into the opposite camp. In the Commons, Pitt, and Lord Polwarth well known as the friend of Bolingbroke, helped to hamper the plans of the Administration. But this accession of force was not altogether agreeable to Pulteney; nor did it, in the end, prove to the advantage of the cause. It brought too many chieftains of great name and power into the confederacy,—men who were not ready to yield proper obedience; and, besides, some of whom had been too lately placemen and members of a most corrupt Government, to have a conception of the contest being for any other object but the ejection of rivals. Very soon after the sudden influx into the ranks of Opposition, we discover hints in the correspondence of Lyttleton and Chesterfield of a factious repugnance to Pulteney's supremacy, not the less marked that that pre-eminence was unassailable, and of plots for forming a cabal of Parliamentary chieftains steadily vetoed by their leader, who believed that the straightforward maintenance of "public and national" interests would secure them the sympathies of the people much more fully than such conspiracies.

At the present the Ministerialist insurgents strengthened his hands greatly in the Lords, whose house now begins to share with the Lower one in the interest of the conflict. After a series of the usual charges, in the interval, against Ministers of a secret conspiracy against the nation, for introducing an extended excise, and of general corruption, with retorts of "artful falsehoods, misrepresentations, and insinuations," a skilful attack was conducted with his aid, but under the auspices mainly of St John, still in France, having for its object a Parliamentary provision for the Prince of Wales, lately married, of L.100,000 a year. The motion was sufficiently reasonable, and at the same time, admirably adapted to gall the King with jealousy at having his son put beyond his control, to compromise Walpole with the heir-apparent, and to give Opposition a hold on the gratitude of the future sovereign (which, had he lived, he would doubtless have quickly showed himself superior to), and the semblance of loyalty to the reigning family. The address on the Prince's marriage with Augusta of Saxe-Gotha had been the occasion for Pitt's maiden speech, which, we are told, electrified the House. Lyttleton, another of the Prince's especial courtiers, had then spoken admirably. They now again, with Pulteney, produced a great effect. The latter laid especial weight on the precedent of the present King's allowance as heir. However, through the secession of Shippen and his forty-five Jacobites, from dislike, they said, of any Parliamentary interference with the King, but many of them from displeasure at seeing the Prince assume that place in Opposition which they thought the right of the Pretender, the motion was lost by 204 to 234.

But the occasion for the last and victorious assault was now slowly being prepared, and Pulteney was not much longer to be confined to inuendos, to be forced to make, *e. g.*, the expression of his consent to the anti-liberal resolution against the right of printing debates both in the recess and the session, a scaffold on which to build sundry reflections on Walpole's encouragement of magazines, and hostility to his old principles. Thus the only effect of that resolution was to give Opposition an occasion for a sneer, and to introduce into the *Gentleman's* and *London Magazines* debates in the Senate of Lilliput, and the appellations of the Roman Forum. In 1738 he moved for the production of papers on the exercise by Spain of its asserted right of search. In the same month, he thundered once more against the infamous pusillanimity of the Administration, in not having taken vengeance for the manifold wrongs done us by Spanish officials. The conduct of Ministers on the capture of our merchant vessels, he would, he said, illustrate by the story of a gentleman, who, upon receiving a box on the ear, asked him that gave it if he was in jest or in earnest; and, upon

the other's answering he was in great earnest, the honest gentleman replied only, "I am glad you are, sir, for I do not like such jests." He called for vengeance, not restitution or reparation now. "The captain or the governor must be hung in chains upon the island where the outrage was committed." Bloodier measures still, he cried, were needed to compensate England for what Burke has called the "fable of Jenkins' ears." Probably that mariner's tale of the cropping of his ears was a fiction, equally with the retaliating anecdote in vogue in Spain, respecting the two noble Spaniards who had been forced, by some of our half-privateering men-of-war's crews, to devour their own noses. However, it evoked one universal cry of hatred to Spain throughout the island. Under the shelter of the indignation against Government and the Bourbons, Pulteney proposed a series of resolutions, comprising assertions of our right of free navigation through the Southern Seas, and of cutting logwood in Campeachy Bay. Walpole by his argument on the insolence of setting before Spain a *carte blanche* to sign, when a conference was to commence, obtained, that the first only passed. Yet an address to the King was carried, to demand redress of Spain; and, in the House of Lords, even the Ministerialists consented to put on record a solemn denial of the Spaniards' right of search.

After a short time came the Convention. It was indeed weak and unstable, and Pulteney and Wyndham made a fierce onslaught on it, repulsed by a majority of only 244 to 214. But the thirty were staunch; and, on the advice of St John, still in France, but against the feeling of Pulteney, it was resolved to appeal to the country against the present Parliament by a secession. It did their party no good, as such a scheme never has, and never will; being a betrayal of a trust committed by their constituents to the members, and indicating that most anarchical sentiment, that the minority are not bound by the decision of the majority. In fact, the plot did not turn out successful. Wyndham, in bidding farewell to the House, had been the more virulent, that he hoped to rouse the sympathies of the country on his behalf as a political martyr, by being sent to the Tower, for stating his disappointment at finding, that not even for once would his opponents be won over "by unanswerable arguments to distinguish themselves from a faction against the liberties and the properties of their fellow-subjects." But the experienced Premier restrained Pelham's eagerness, and expressed his joy that they had declared themselves: "We can be," he exclaimed, "upon our guard against open rebellion, but it is difficult to guard against secret traitors." He even frustrated their calculations of being forced without shame to return by a call of the House fixed for the next

Monday; for he moved that the Commons should adjourn over that day.

Circumstances favoured the seceders. Argyle, the famous Whig Duke, had been patriotically enraged at the Porteous Bill against Edinburgh; and, to the surprise of both Pulteney and the notorious, ever-caballing Duchess of Marlborough, who equally disliked him, came over to the Opposition, and converted their hatred into the most ardent affection. Pulteney had previously, when the negotiation was going on, taken advantage of the presence of the Duke in the Commons, to break out into a panegyric on his great qualities, concluding, "He wants nothing to make him still greater, but to be stripped of all the posts, of all the places he now enjoys;—but that they dare not do." This was one fortunate event; another was, the refusal of Spain to ratify the Convention, and the consequence, a declaration of war. The nation exulted, but not *with* the Government; they regarded hostilities as a triumph over it. The Prince of Wales accompanied the heralds to Temple Bar, and, at the Rose Tavern, drank success to the war. The contest was, men thought, to be one series of victories; the galleons should pay the fleet; the kingdom should have the mines of Mexico and Peru. "They now ring the bells," said Walpole, in the strain of a Greek chorus, "but they will soon wring their hands."

In November, Parliament met; and there were all the seceders, Pulteney—after various wild remarks, that he would go no more to the House, though he should be sorry were others to follow his example—among them. He now gave no sign of his hesitation. Ministers, he declared, having confessed themselves in the wrong,—for, if the war were now necessary, so was it then,—*they* had returned. He hoped that the same meanness, tameness, and submission, which had resulted in that shameful Convention, would not operate to make us resign our conquests on peace. It was sneeringly retorted, that Parliament was glad to see gentlemen return to their duty, but had not felt their absence. "The stale argument of corruption never shall have any weight with me," said Walpole; "it has been the common refuge of the disappointed and disaffected ever since government had a being; and it is an accusation that, like all other charges, though unsupported by proof, if advanced against the best and most disinterested administration, and pushed with a becoming violence, will never fail to meet applause among the populace." His tone and spirit were as high or higher than ever; but he felt power slipping from him, and perceived the growing disaffection of his partisans. He had to turn aside the edge of Wyndham's philippic, by letting an address be sent up to the throne against any peace by which the Right of Search should be allowed. Even the death of that orator, "about whom everything seemed great," though it

clouded the life of Bolingbroke, and broke the chief link between the two sections of Opposition, did not save the Ministry.

Sir Robert had, at least, the pleasure of seeing his foes once more disappointed. Supposing, from their strength in the Lords, and their late compactness in the Commons, that the time was ripe, Sandys, the motion-maker, as he was called, a rather interested patriot, was let loose upon him. By him our being without allies was ascribed to the alliance with France and the treaty of Hanover, not the peace of Utrecht. Corruption, the squandering public money on "Spithhead expeditions and Hyde Park reviews," while Haddock's and Vernon's fleets were destitute, the criminal lenity to the South Sea Directors, and the dismissal of men in office for their votes, were all due to one "who had usurped a regal power, who had arrogated to himself a place of French extraction, that of Sole Minister." Even were he not guilty, "in a free government too long a possession of power is highly dangerous." The charges could not be examined while he kept his place. Besides, "he is bewildered in treaties, and has forfeited his word with every court in Europe." The majority of Opposition endorsed these pleas. Pitt declared, with a prognostic of his own capacity and destiny, that "when the greatest scene is opening to Europe that has ever before occurred, he who had lost the confidence of mankind should not continue at the head of the King's Government. Pulteney, flushed with an easy triumph over Walpole's bad Latin, "*nulli pallescere culpa*," and his winnings of a guinea, "the only money he had received from the Treasury for many years, and, he hoped, the last," followed with declamations against the treaty of Hanover, "the source of all subsequent degradations." The vagueness of the charges, and the ominous sound of accumulative and constructive guilt, credibility of common report, and the like, brought to the Minister's aid not only Stephen Fox and Pelham, but the Tory Lord Cornbury, and even Edward Harley, who heaped coals of fire on the head of the persecutor of his brother, the Lord Treasurer Oxford, by challenging for him a different treatment to what the Earl had received at his hands. Partisans rallied round him from all sides. Shippen's thirty-four Jacobites withdrew; their leader, who had been bribed either with money or indemnity, remarking, "that the motion was but a scheme for turning out one Minister and bringing in another." He himself rose to the level of the occasion, and made good Pulteney's opinion, that he could be a great orator, when he pleased. He classed Opposition as "boys," "ripe patriots," and "Tories." Demerit with the latter should be a merit with the rest. Nevertheless the Tories he respected. His greatest crime against them had been the duration of his power;—but, would they endure

to share with such mean competitors as the rebel Whigs, after having divided the public opinion of the whole nation! Could they share with "the men of yesterday, the boys in politics, who would be contemptible, did not their audacity render them detestable." The patriots he despised. "A patriot, sir! Why, patriots spring up like mushrooms! I could raise fifty of them within the four and twenty hours! I have raised many of them in one night. I have never been afraid of making patriots! . . . They clamour for change of measures; but they only mean change of Ministers." The dismissals for contrary votes he excused as the acts of the King, who might wish "Crown favours to circulate." He appealed to his services,—“Is not credit at an incredible height, and to whom must that be attributed?” And where were the proofs of his crimes, while invested with that “mock dignity of Prime Minister?” “A strange phenomenon! a corrupter, himself incorrupt!”

A clear majority of 184 pronounced him free of all the charges. This great majority proved Walpole's ruin. It threw him, wrote a contemporary, into a lethargy of power. Loss of memory, and other maladies of years, began to impair his energies and destroy his followers' confidence in their chief. From over confidence in his strength, or carelessness, he gave many, on the meeting of a new Parliament, an excuse for opposing Government in the election of Dr Lee for chairman of Election Committees, against the unpopular Giles Earle, and thus threw away a most important advantage. The unseating of the members for Westminster, two Ministerialists, by a majority of four, and the Berwick election decision, warned him of his folly when it was too late. He once more roused himself from his fits of silence, alternating with fretful captiousness, to deliver a masterly answer to Pulteney's motion for referring the papers respecting the war to a secret committee. The self-compassionating Old Whig houses congratulated themselves on being saved by this speech, and the timely conversion of two Tories, from four and twenty tyrants. It must have been an animating scene. Ministers had been deceived as to the purport of the motion; the ranks of the Opposition were full, though only the chiefs had been told the cause. “Sir William Gordon (Ministerialist) was brought in like a corpse; some thought it had been an old woman in disguise; others, who found him out, expected him to expire every moment. Mr Hopton (Opposition) was carried in with crutches.” This victory was the last. The substance of the same motion passed without a division in a few days; and the decision on the Chippenham election, against Government by a majority of one (January 28), was followed (February 11) by the resignation of the great “Prime Minister,” spite of all the cal-

culations of the Cavendishes, etc., that he would never give up, but could, if matters came to the worst, bribe the whole of Opposition into submission by the offer of a few sinecures.

It had been a hard thing to get the victory. To divide the spoil was yet harder; nay, it was an insuperable task. The conquerors acted like the brigands in the story; they poisoned their comrades, and yet, in perfect guilelessness, drank deep of *their* poisoned flasks. Each thought his own merits the most engrossing, the most exclusive; the veterans of Opposition, because they never had taken a place; the tyros, because they had sacrificed so much, and so recently. It was pleasurable, at all events, that they could with one consent fly upon Pulteney. Many of them thought him not sufficiently decided in the late struggle; some malignant minds ascribed to him, with his friend Carteret (afterwards Earl Granville), systematic treachery. "They desire to get in," wrote Chesterfield in the September of the last year, "by negotiation, and not by victory with numbers, who, they fear, might presume upon their strength, and grow troublesome to their generals. . . . The only effect of our strong minority will be to raise the pride of Pulteney. He has a personal influence over many, and an interested influence over more. The silly, half-witted, jealous Whigs, consider him as the only support of Whiggism; the interested Whigs, being persuaded that he has opened the door of the Court a little, will hold fast by him to squeeze in with him." Thus, the true Whigs relied on him as a Whig and hater of Tories—the Tories believed him to have a paramount influence; and that, therefore, what was not done to please them, was left undone through his party spite. Both Tories and calculating Whigs—i. e., the majority of Opposition—esteemed his professions of purity a veil for motives no better than their own. Walpole did all that he could to encourage the schism in the body of his enemies. He hoped thereby to escape an impeachment, and he had persuaded the King to come to terms with Pulteney as the only man who could save him.

With all his apparent supremacy—a supremacy which almost justified his haughty language, "If the King wished to *open any treaty*"—the "great Commoner's" power was really gone with the achievement of the object for which it had been placed in his hands by the nation. He had no great principles of policy to declare and to develope; he had not even experience in the commonplace ones which his predecessor had elaborated. He had been, for all the maturity of his political life, feeling his way along the track made by the man he was pursuing to the death, and he was left all alone in the dark forest, when, with the rout of his enemy, the road, as Longfellow says, suddenly

turned into a squirrel track and ran up a tree. We must repeat, he had no right to complain that he did not remain the popular idol; neither, for that, had the people, that he had deceived them. He had done their work in casting down Walpole; they had helped him in attaining his revenge. It was his own fault, that he did not seize the opportunity of striking one more blow for his position. Certainly "he was once in the greatest point of view in which a subject has been ever seen." To him was confided the task of choosing some plan of reformation, or some revival of old systems. To please all was impossible. As a cotemporary remarks ("Faction Detected," by Lord Egmont), a Place Bill was, in some men's eyes, good government; with others, annual Parliaments; with others, reduction of the civil list. Some cried for justice on the Minister, and others for pensions for themselves. The plans for his guidance were as various as the sections of the Opposition he had led. Many of them might be good; but very few were feasible in the struggle of party feeling. He could have pleased most by hounding them on to the destruction of his late rival. Nothing was easier; but he was not a man of blood, and "had meant, by the Minister's destruction, the annihilation of his power, not of his person." Neither his doing, nor his leaving undone, any of those measures, was the reason of the suddenness of his fall. It was not that he grasped at too much power for himself. Perhaps it would have been his most popular plan to have made himself absolute Minister in Walpole's stead. Of course he would have fallen, and far more speedily than his predecessor; but then not so terribly as that personage did, not so ignominiously as he himself did. The rage of the kingdom was roused at him for achieving a signal triumph by their help, and then (they did not expect that he would throw open to them the Treasury and Admiralty Boards) leading them round by another way, not to the old system—for even that they would have put up with—but the old officials.

His followers were, of course, dissatisfied with his conduct. Whatever it had been, when there were forty or fifty claimants for Cabinet office, it could not have been otherwise. He certainly exaggerated the discontent by omitting Chesterfield, from a notion that he had betrayed the party once to Queen Caroline; also Dodington, that magnificent lover of himself in deep brocade and embroidery, tye periwig, and laced ruffles (as depicted by Cumberland), who used to amuse himself with politics and sigh for a peerage; lastly, Lyttleton and Pitt, immediate retainers of the Prince, who was thus slighted in the arrangements. Three hundred, Peers and Commoners, met at the Fountain Tavern, to arraign their leader. Argyle sneeringly remarked, in allusion to

the other's wealth, that a grain of honesty was worth a cartload of gold, and asked Pulteney where was the annihilation of Party, if the Tories were to be excluded from the Ministry. The latter, although ever shrinking from general party meetings, and steadily refusing to call them at Chesterfield's and Dodington's suggestions in former times, took up a bold attitude. He declared, certainly in what seems a rather official tone after his old style, that "Government neither can, nor will, nor ought to be, taken by storm;" that all the old Ministers could not be turned out; that "it must depend upon the prudent conduct of the Tories themselves, to abolish the odious distinctions of party;" finally, that "it was not just, dutiful, or decent, to dictate to the King how to dispose of every preferment." The audience, no doubt, felt the point of Hanbury Williams' stanza—

"Then enlarge on his cunning and wit,
Say how he harangued at the Fountain;
Say how the old patriots were bit,
And a mouse was produced by a mountain."

His remonstrances did not carry conviction; and a second meeting, but of the chiefs, was held before the Prince of Wales, when the Tories were pacified by the promise, that one of them—Sir J. Hynde Cotton—should be a lord of the Admiralty.

For himself, Pulteney had demanded an earldom and a seat in the Cabinet without office, conceiving himself bound by a foolish declaration. He was, in fact, rather tired of the responsibilities both of a leader and of a seat in the Commons. He had some time back complained, "that he was weary of being at the head of a party; he would rather row in the galleys, and was absolutely resolved not to charge himself with taking the lead." The events of the last few months had proved to him the truth of his own comparison—used to Hardwicke and Newcastle when they came from the King to drink negus and talk of a Cabinet—of the head of a party to "the head of a snake which is carried on by its tail." Both his dislike of the calls upon a chief in the Commons, and his desire of adding rank to his tremendous fortune, made him decide upon a seat in the Lords. He was glad to leave his fame still fresh and living in the Commons. The Court and King, originally reluctant, had been taught by Walpole to consider this elevation the best means of disarming a dangerous demagogue; and the late Minister exulted in having turned the key of the closet upon his rival at last brought to a conference with the sovereign. Nor was it the peerage which irritated the popular mind against their idol, as in the case of the elder Pitt; it was the appearance of a betrayal of them into the hands of the old Administration, and a desertion of his duties

by himself. So much was this the case, that his delay in taking the earldom, arising from the hope (a vain one) of passing a bill against bribery at elections, and forcing his old enemy, Lord Hervey, from Court, and especially of procuring some semblance of royal favour for the Tories, two-thirds of the gentry of the nation—who, by a contrary policy, were being driven into Jacobinism—was popularly imputed to obstinacy in requiring, for sparing Walpole, his price from the Court. Even the old calumny, of the exchange of his long lease of part of Piccadilly for the fee-simple, was vamped up again, and burnished as a new incident. Against such charges, it might have been thought that he was proof. They chiefly, in fact, irritated him, as, by their popular acceptance, testing the intensity of his present unpopularity. In his agony on discovering the change which had come over the spirit of his adherents, he even appealed to the King, but in vain, to take back the patent; and is said, when it was delivered to him, to have stamped and trampled upon the parchment, in a paroxysm of repentance and mortification.

The fallen Minister, on the contrary, was saved from the worst consequences of his disgrace; it was soon whispered about that he was still the sovereign's confidential adviser. All his friends were promoted, all his policy adopted, whenever an opportunity occurred of showing the country how vainly it had struggled. In 1743, Lord Wilmington, the titular Premier, died; and Pulteney's old associates, jealous of the preponderance of Walpole, overpersuaded him to retract his resolution of never accepting place, and ask for the Treasury. The King coldly declined his services, and nominated Pelham. The loss of his importance was once more indicated to him when his request of the Privy Seal for Carlisle was rejected in favour of Earl Cholmondeley, Walpole's son-in-law, and his remonstrances against the introduction of Henry Fox, one of the most corrupt of the old Administration, were quietly neglected. The glimpse of power, called "the Revolution of three days," which visited him in 1746, only lighted up the barrenness of his political fortunes. George had found the tyranny of the narrow-minded, selfish bureaucracy, represented by Newcastle, intolerable. He entreated Lord Bath to overthrow this clique. The office was accepted; Gideon and the moneyed interest prevailed upon to countenance the plot, and Granville suddenly declared Secretary of State. It was just such a conspiracy as might have been expected from Granville, who always, drunk with claret or imagination, loved a combination in the inverse proportion to its feasibility, and from the eagerness and antecedents of Pulteney, who had once been able to gather a host about him by a nod, and forgot he had lost his popularity. There was a rebellion in the midst of the kingdom;

all the Ministers had at once resigned ; the Lords and the Commons refused, to a man, to have anything to do with the plot ; the nation looked on with the most irritating apathy ; and Granville and Pulteney had to retire disgracefully. "Your victory is complete," wrote Chesterfield from Ireland, where he was viceroy, to Newcastle. "Good policy, still more than resentment, requires that Granville and Bath should be marked out, and all their people cut off. . . . A general run ought to be made upon Bath by all your followers and runners."

Persecution was not necessary. Pulteney was not, in the Lords, a politician even to be feared by Newcastle. He himself could not comprehend the loss of his popularity. To himself he appeared the purest of patriots, who had constantly refused office. He did not understand that purity out of place is rather a negative virtue. But, though he could not explain the loss, he was fully conscious of it. The satirical odes of Sir Charles Hanbury Williams "inflicted," says H. Walpole, "deeper wounds on" (at least the spirit, if not the power of) "this lord (Bath) than a series of *Craftsmen*, aided by Lord Bolingbroke, for several years, could imprint on Sir Robert Walpole." The fierceness of Akenside's ode to him was less heeded. It was certainly a species of monomania in him to resign, at the price he did, his old power and station, when

The city felt his call ; from man to man,
From street to street the glorious horror ran ;
Each crowded haunt was stirred beneath his power,
And murmuring challenged the deciding hour.

And then—

To beg the infamy he did not earn ;
To challenge hate when honour was his due,
And plead his crimes, when all his virtues knew.

But Pulteney, though his vanity had been flattered by popular applause, was a member of a very different world to Akenside's, and was much more provoked by the epigrammatic irony of Williams than the denunciations of a true poet.

In that world, of which he was an ornament, he found many consolations for his disappointments. His playful affectionate nature had full scope in the society of many admiring friends. He was the guide and friend of the great original of literary ladies, the celebrated and fashionable Mrs Montagu, and through her, he was admitted to intimacy with Mrs Elizabeth Carter, still remembered as the translator of Epictetus. With them he could develop to the uttermost his genius for Greek and punning, suffer himself to be dragged up to the summit of the glory of Tunbridge Wells, Mount Ephraim, and inveigled into spending his money on nose-gays. His kindness and courteousness

never failed. Even his servants shared in his general affability. Two bishops, Newton, originally his chaplain, and the author of the *Commentary on the Four Gospels*, and Zachary Pearce of Rochester, at whose request the question of the possibility of a bishop's resignation was first raised, were his familiar companions. They both bear testimony to his unvarying kindness, goodness of heart, and even his munificence. He loved his wife, and was loved in return ardently. "She," says Newton, "was a wonderfully agreeable woman when she pleased, but was often clouded and overcast." By her love of speculation and hoarding, which made her brother call her dressing-room, the favourite resort of Gideon and the stockbrokers, "the Jews' synagogue," she encouraged her husband's natural love of money, till it became a deformity in his character. Yet he did not accumulate without an object; all his thoughts and hopes were concentrated on his son, Viscount Pulteney, an amiable young man, but no orator or statesman. On this young man's death, of which intelligence had reached the guests at the father's table before himself, and whose health and happy return he would, in his ignorance, persist in drinking, as we read in the pathetic narrative by Newton, he became indolent and indifferent about the disposal of his riches; and, from want of interest, not, as his enemies insinuated, from incapability to repeat those self-denying words, "I give and bequeath," left it, to the amount of £1,200,000, wholly in a few words to General Pulteney.

From the letters to his adopted nephew, the gay and brilliant, but indolent George Coleman the elder, we gather some curious hints respecting the great statesman in his old age. We see him careful before his son's death of any device by which he might save five pounds, informing his young correspondent that he must get his living "by toil and drudgery;" that he will be "closely watched at Lincoln's Inn." At another time, he reminds him of a debt to himself—"the first thing that an honest man has to do is to pay his debts;" and warns him against wasting his time and money on going to the theatre. With all this, there is much true thoughtfulness and affection manifested; and he regrets Coleman's absence from any scene which they had enjoyed. He writes from Spa, that it is a pity he had not been there, "to play whist with a vast number of princes and princesses at twopence a corner." We can perceive, also, indications of the old tendency to love whatever was popular, in his sudden acquiescence in his nephew's dramatic pursuits, and willingness to have "*The Jealous Wife*" dedicated to him, with his eagerness to cultivate Garrick's acquaintance. In all his wanderings to Spa, and Bath, and Tunbridge, he betrays the same concentration of his interest and curiosity on the world of London, and requests Coleman to be sure

to send him, with Churchill's new poem, which he admired, "all the chit-chat he can pick up, whether in Lincoln's Inn, in Grub Street, or St James's, let it be private scandal or political falsehoods."

In 1760, his old, but now long dormant, passion for pamphleteering revived, and the arguments of his anonymous "Letter to Two Great Men" (Pitt and Newcastle), for the retention of Canada, triumphed in the coffee-houses, though by statesmen not more heeded, asserts Horace Walpole, than would have been their own, had "they survived patriotism and power twenty years." In the same year the influence at Court, which he flattered himself he had never lost, became more actual on the accession of George III., who remembered Lord Bath as a kind and favourite visitor at Kew in the days of his father. It was great enough to rouse the jealousies of the Ministry; but an old man of seventy-six was not a very dangerous competitor for power, as evinced by the ill success of his efforts to gain permission for the exhausted Bishop Pearce to resign, and to procure the translation

of his friend Newton to a richer see. After the death of his son, whom he only survived a year and a half, he ceased to cherish schemes for final political demonstrations, either occupying himself with pious meditations, or innocent gaieties. His enemies only saw in him a politician who had been the tool of his allies, and a miser. Horace Walpole sums up his character with, "he died very rich;" and Lord Chesterfield, on the news of his death in 1764, writes to his son, "the public, which was long the dupe of his simulation and dissimulation, begins to explain upon him." But there had been much happiness in the life of Pulteney, and some advantage to the world of which those two impersonations of polite society, Chesterfield and H. Walpole, could form no idea.

To us the period which Pulteney occupied is the stock and source of our political and social history. Our court dress and the fashion of our modern literature, our very everyday language, our manners, and almost our modes of thinking, can be scarcely traced to a higher fountainhead. As one of the two centre figures in that period, and the one, too, who more peculiarly, partly, from his disposition, incapable of bearing the predominance of any coteries, and an independence hardly compatible with the place of a Minister representing the great Whig houses, partly, from his position at the head of the Opposition, represents the new order of things, he must always possess much interest for us. The struggle, by itself, has all the essentials of picturesqueness, and a completeness which serves to hide the miserable weakness and gross selfishness of the subordinate figures in the group.

- ART. II.—1. *Correspondence respecting the Affairs of Naples and Sicily, 1848-1849.* Presented to both Houses of Parliament by command of Her Majesty, May 4th, 1849.
2. *Correspondence relative to the Affairs of Naples.* Presented to both Houses of Parliament by command of Her Majesty, 1857.
3. *Atti e Documenti del Processo di Maestà per gli Aurenimenti del 15 Maggio 1848, in Napoli, etc., etc., etc.* Torino: Fedin-codi Lorenzo, 1851.
4. *I casi di Napoli del 29 Gennajo 1848 in poi.* Lettere politiche, per GIUSEPPE MASSARI. Torino: Tipografia Ferreroe Franco, 1849.
5. *Le Roi de Naples devant L'Opinion Publique.* Par GUSTAVE CHATENET. Paris: Librairie Nouvelle, 1851.
6. *Sicily and England. A Sketch of Events in Sicily in 1812 and 1848.* Illustrated by Vouchers and State Papers. London: James Ridgway, 1849.
7. *Narrazioni Storiche di Piersilvestro Leopardi con Molti Documenti Inediti relativi alla Guerra dell'Indipendenza d'Italia e alla Reazione Napoletana.* Torino, 1856.

WHEN Mr Gladstone published, in 1851, his celebrated Letters to Lord Aberdeen on the state of Naples, a thrill of horror ran through Europe. The testimony of one, by character above suspicion, as by means of information and the well-known bias of his political sentiments above easy credulity, spoke with the earnest tone of indignant conviction to the truth of habitual atrocities, in the whispered rumours of whose possible existence the world had hitherto refused to put faith. Six years elapsed—years of mighty events, when public attention was openly drawn towards the same unfortunate country, through the solemnly pronounced opinion of the official representatives of Europe, when assembled at the Congress of Paris, that the state of Naples was a threatening danger to the world's peace, a canker in the body-politic of Europe, and a thorn in the side of all orderly government. The verdict of the world's chosen statesmen pronounced Naples a scandal, fraught with such imminent risk to its neighbours, as for the common interest of all required to be amended; and it fell naturally to the lot of France and England, by virtue of their leading position among nations, to make those representations to its sovereign which might induce him to adopt conduct in accordance with those ordinary principles of humanity which are necessary conditions for fellowship

with civilised communities. These were, however, met with such sullen imperturbability, and so resolute an avowal, that no consideration for the opinion of the world would make the King change the behaviour he had adopted towards his people by right of his independent sovereignty, that France and England, out of regard to their own honour, the dignity of their rank, and the duties of their position amongst nations, had no choice left but publicly to resent the insults which had accompanied the rejection of their friendly advice. Although the Government of Naples has thus recklessly refused to listen to warning, it has, nevertheless, manifested consciousness enough of the force of public opinion in Europe to try and ensnare it, by flimsy apologies and precatious protestations against the violence done to its independent rights by foreign interference. Trusting to baffle detection behind darkness, in which it is, and ever must be, the study of a Government like that of Naples to shroud itself and all connected therewith, writers have been repeatedly hired to try and mislead the startled attention of Europe by flashes of false information. If the King of Naples, however, thinks, because here and there he has contrived the insertion in a newspaper of some of these brazen-faced assertions, that therefore he may succeed in inducing the public opinion of Europe to revoke the verdict it has deliberately pronounced on his conduct, he is as much mistaken about the world in general as he is about England in particular. The privilege of independence is no less subject to duties than that of property; and in the 22d sitting of the Congress of Paris, Lord Clarendon well said, with reference to the conduct of the Neapolitan Government, "that although it must doubtless be admitted in principle that no government has the right to interfere in the internal affairs of other states, yet there are cases in which the exception to this rule becomes equally a right and a duty." Fellowship is the bond of society; and if an individual sins against it, society not only makes him pay a penalty, but exacts reparation of the wrong done.

Much as Mr Gladstone's pamphlets did excite attention to an unwonted degree, the full truth about Naples has nevertheless never been known in this country. The astounding facts recounted by him are but a drop in the ocean of Neapolitan iniquity, having been all supplied by the first and the far least monstrous of those persecutions which have converted one of the fairest regions of earth into a social wilderness. It was after his departure from Naples, and at the very time when its Government was protesting with impious solemnity against his supposed calumnies, that it perpetrated deeds; the one more outrageous than the other—to find the equal of which we must travel back the space of nineteen centuries, from Christian Europe to the

abominations of imperial wantonness in Pagan Rome. Mr Gladstone, moreover, purposely refused to mix up his denunciation of inhumanities with discussion of political matters, so that the bad faith of the Government, and the state of public opinion, were altogether left unnoticed by him. These are, however, points deserving at the present moment the highest attention; for they constitute the claim for the intervention of Europe against violence brought to bear on a settled tendency of opinion, the force of which has already been strong enough repeatedly to convulse the world. Since the late Congress at Paris, the future fate of Italy has, so to say, been recognised by diplomacy as one of the chief problems of cotemporary history; and this is so intimately mixed up with that of the kingdom of the Two Sicilies, that the situation of the latter must, per force, become a subject of forethought, and thus a question which while it enlists our natural sympathies, at the same time exacts the attention of prudent statesmen. The Revolution of Naples was amongst the least observed of the many eventful incidents of the year 1848. The glance of Europe, when drawn to Italy, was then riveted by Lombardy; and afterwards the lurid glare of Mazzinian Republics formed a cover behind which the King of Naples safely hid his tyranny, while the world, wearied at revolutionary excess, gave a ready belief to the falsehoods with which he cloaked his doings. It is, however, a fact, that never was there a revolution so free from illegal excess, and so thoroughly temperate in its conduct, as that of Naples. Indeed, the anxiety of the Chambers to maintain accordance with the sovereign was so sincere, that they willingly legalised, by subsequent vote, several of his arbitrary proceedings, in the hope of extending a veil over the past, and securing the foundation for a future good understanding. Facts, however, speak more tellingly than any reasoning; and as it is of importance that the English public should understand the rights and political bearings of a case with which it has connected itself, we will briefly state those points which prove that the King of Naples has not only justified our intervention on the score of humanity, but has actually made it imperative on us, unless we choose to forsake the traditions of national policy.

The political movement in the kingdom of the Two Sicilies began first in its insular portion. Fired by the recollection of their ancient privileges, which, though sworn to by the Bourbons, have been signally violated by them, the Sicilians boldly drew up a statement of their grievances, with the threat to remedy them by force of arms, if, by the 12th January 1848, the Government had not done so of itself. This challenge of unexampled daring was literally acted up to; and the Neapolitan army having been attacked on the above-mentioned day, was finally

obliged to evacuate Palermo. Meanwhile, public opinion was also manifesting itself in Naples, until the King saw himself so beset by difficulties, his army beaten, one-half of his realm in open and victorious rebellion, while the other half was growing in discontent, that, on the occasion of an imposing, but wholly pacific demonstration, on the 29th January, he promised a constitution; which was accordingly published on the 10th of the following month, and sworn to by the King of his own free will, amidst great pomp, in an oath of the most studied solemnity. The news of the rising at Milan, with Charles Albert's declaration of war against Austria, soon came, and excited amongst the Neapolitans so decided an enthusiasm for the cause of national independence, that the King deemed it prudent to affect the like. A Ministry was named by him of men universally respected for probity and patriotism; and on the 7th of April the King declared war against Austria, by a proclamation, in which he called on his people, in stirring language, "to rally round their Prince, and aid in deciding the fate of their common country on the plains of Lombardy." General Pepe, an old soldier of King Murat's time, who, in 1820, had commanded against the Austrians, a man whose unsuspecting good faith made him no match for cunning, received the command of the expedition, which was announced to go to Charles Albert's help. On all occasions, such excessive zeal was manifested by the sovereign, as completely overreached his Ministers and the old general. When the volunteer legions, whose enrolment had been suggested and specially encouraged by royal and official appeal to patriotic sentiments, were about to start, the King took leave of them in a stirring address, ending with a promise soon to join them himself on the field of battle. Yet the whole of this was nothing but a trick to relieve himself of inopportune company, and husband his strength against the time when an artfully meditated blow could be safely struck. The army despatched towards Lombardy was a device whereby to encourage the emigration of warlike youth in the ranks of the volunteer legions, and the royal order, which a few weeks afterwards recalled the regular troops, expressly excepted the latter from obedience to it.¹

¹ The treatment bestowed on these unfortunate men, who never acted in disobedience to any royal command, but in positive accordance with such, is one of the most audacious iniquities perpetrated by the King. After the fall of Venice, the heroic defence of which was mainly owing to them, they embarked for their homes, but were refused admission into the Neapolitan harbours. Having, therefore, sailed back to Venice, where, of course, they were refused permission to stay, the Austrians forced them to return afresh, sending this time, however, a brig of war with them, the menaces of whose commander quickly made the Neapolitan Governor of Brindisi to allow them to land. There began new sufferings; without accusation, and much less trial, almost all these unfortunate men were imprisoned, whose only crime was a patriotism which had been

The same unscrupulous duplicity characterised the King's conduct on every occasion. It is impossible at the present day to doubt that the constitution granted by him, with such a lavish profusion of solemn oaths, was never meant to be anything but a feint whereby to allay dangerous agitation at a critical moment, and even cunningly divert it to his own purposes by fomenting ill-will amongst the Neapolitans against the Sicilians. The constitution of the 10th of February instituted one Parliament for the United Kingdom. This, a boon to the Neapolitans, was to the Sicilians a fresh violation of ancient and chartered right; and the King, aware that the nature of their pretensions would make them reject such union, thought to have found a device for stripping them of popular sympathy by causing them to seem guilty of unreasonable demands. Such an accusation against the Sicilians is most unfounded. This island had always enjoyed an independent administration, although it had been bound up with other states in a personal union. Even under the despotism of Spanish rule, Sicily had maintained its charters, while its right of independence had been afresh acknowledged and re-established, in accordance with the temper of modern institutions, by the famous constitution of 1812, which, however arbitrarily suspended, has yet never been abrogated. This constitution has, consequently, ever been the bugbear of the King; for its memory is cherished by the people with longing affection, while the wanton violation of its tenor is a weapon ready to his enemies' hands. The clauses which regard the succession to the throne especially worm his conscience; for in them it was enacted, with the solemn sanction of his grandfather and father, that the "kingdom of Sicily be declared, from this day forward, independent of that of Naples, and of any other kingdom or province;" and that the King of Sicily should forfeit the throne if he ever left that island, in the event of the reconquest of Naples, or of any other contingency, without having first, with consent of his Parliament, determined how his constitutional authority should be exercised during his absence.¹ It was to assert this ancient right to independent administration that the Sicilians rose in 1848; and how could it be expected that, in the hour of victory, they would con-

tested. Most of them were sent to the lonely and rocky islands that stud various parts of the coast, but very many were even thrown into the *Bagni* as galley-slaves. Nor was this a temporary punishment; for they continue there still. Amongst the most touching cases is that of two brothers of the name of Campolieto, young men of tender age, and as noble in mind as in birth. These interesting youths, who had distinguished themselves by brilliant valour, were thrown into the *Bagni* of Brindisi, where they were daily exposed to brutal insults at the hands of an inhuman jailor, while they were shut up not with other political prisoners, but with criminals of the most infamous characters.

¹ The whole Sicilian constitution is printed in the Appendix to the Blue Book of 1949.

sent to waive a privilege which they had successfully maintained through the whole of their chequered history? The King, bent all along on wreaking vengeance at the proper time by means of his army, held the same line of policy towards the Sicilians as towards the Lombards. With irritating procrastination, he conducted negotiations with his subjects which were never meant for any other purpose than to win time. In vain Lord Minto, whom the King himself summoned to Naples, expressed his willingness to undertake mediation, if any terms were offered which could be possibly acceptable; for although there was great apparent readiness to grant every desirable concession in principle, yet the King always obstinately refused the necessary practical guarantees. At last, under the influence of the startling tidings that a Republic was established in Paris, he consented, on the 6th of March, to terms which, although not distinctly containing that explicit recognition of their independence which the Sicilians, emboldened by victory, demanded, yet sanctioned such a separation of Parliament and administration as would have secured the first wants of the island, had the decrees been carried out in that sense which Lord Minto was instructed by the King's authority to apply to their obscure wording. Lord Minto, consequently, hastened at once to Palermo, in the hope to avert, by his personal influence, the imminent dangers caused by the King's procrastination and deceit; and never has there been a more signal display of moderation or confidence than that shown by the Sicilians on this occasion. Worn out by the King's hitherto sullen refusal of their demands, the Sicilians, giving way to natural animosity against their oppressor, and excited partly by the flush of the same tidings which had momentarily shaken the obstinacy of Ferdinand, and partly at a fresh piece of double-dealing on his part, were bent on proclaiming the deposition of the Bourbons at the time of Lord Minto's arrival. While the English plenipotentiary had been led by the King's entreaties to become the channel of his communications, and fancied that, by this act of condescension, he had merited his confidence, he found, to his no small surprise, that without his knowledge a Neapolitan war-steamer had been sent before him, and had publicly distributed the draughts of those crude decrees of which he had believed himself to be the bearer, and the acknowledged insufficiency of whose terms he had been requested to render acceptable by the pledge of his faith in the King's intentions. In spite of this shameful trick, Lord Minto, nevertheless, declared that, unless the design of deposition were laid aside, not only would he be unable to be of any use to the Sicilians, but that, charged as he was by the King with mediation, he must absolutely withhold all intercourse with them, and leave the island forthwith. With a con-

fidence that ought never to be forgotten, the Sicilians waived their intentions out of deference to the wishes of England, and declared themselves ready to accept the King's terms, provided they were so precisely drawn up as to put their proper interpretation beyond cavil. In the form of convention,¹ accordingly, drawn up by the Sicilians, and which is to be found in the Blue Book, there was nothing which required a new concession in principle. They strictly contented themselves with absolutely necessary guarantees, the demand for which was perfectly justified by past experience, and the fact that they had to secure themselves against a sovereign who had at his command an army of foreign mercenaries. To these guarantees, which would have made a reality of his written concessions, the King refused to consent, colouring his rejection of them with the most futile pretexts; and thus all negotiations were broken off, when he had succeeded in egregiously duping Lord Minto, and had reaped the object of his cunning, by deluding the Sicilians into inactivity during weeks of irreparable importance.

Meanwhile the Chambers had been convoked at Naples for the 15th of May, a day which was anxiously looked for as the last of suspense and the first of settled government, but was, instead, destined to usher in the bloody inauguration of a reign of terror, which still continues, and is worse than anything that unfortunate country ever suffered. The Ministers, men of the best faith, and so desirous to save the throne from attacks that they shielded it at the sacrifice of their own reputations, were met in all their efforts at organisation by opposition on the part of the King. Loath to injure him in public opinion by a revelation of the difficulties thrust in their way, they wrongly yielded to him as much as possible, in the belief that the speedy assembly of the Chambers would bring the proper remedy to this situation, while the King would find himself carried beyond power of regress by his participation in the war of independence,—both which suppositions were signally disappointed. Public opinion had been much excited against the Chamber of Peers, as constituted by the statute of the 10th of February, which, when promulgated, had been proclaimed *irrevocable*. The King had, however, subsequently listened to the reasonable objections urged against it; and his present Ministry had made it a condition of accepting office, that a proclamation should announce that for this first Parliament the Peers would be chosen from lists presented to the King by the electoral colleges; “while the Legislative Assembly, met in its two chambers, should, in concordance with the sovereign, have the power of changing the fundamental statute, *especially in that which regards the Chamber of Peers.*” In several pro-

¹ This convention will be found at page 233 of the Blue Book of 1849.

vinces, the machinations of hidden plotters succeeded in causing petty riots by the spread of alarming reports, which kept the country in a state of irritation; while the demands of the Ministry for the distribution in the provinces of the excessive military force congregated in the neighbourhood of the capital, were met by obstinate refusal on the part of the King. The unceasing efforts of influential individuals alone repressed all serious disturbance, as it was the excellent bearing of the National Guard which preserved the order of the capital. It is, indeed, a most noteworthy fact, that during these months of political agitation no single case of violence occurred on the part of the people, in spite of the notorious remissness of the police, while several were committed by the soldiery. The Canon Pellicano, Under Secretary of State for Ecclesiastical Affairs, was murdered by Royal Marines; and a sergeant of police attempted to let loose the galley-slaves at Castellamare, but was prevented by the Duke of Sandonato, who commanded a detachment of the National Guard. The King hearing of this, demanded the sergeant's name, exclaiming, that he should be made an example; and accordingly, a few days after the victory of the 15th of May, he was promoted to the rank of officer.

The deputies, on their arrival in the capital, received a circular inviting them to attend a meeting on the 13th of May, at the house of Don Francesco Ruggiero, for the purpose of acquainting themselves with the proceedings of the ceremony of convocation. Ruggiero, who had all along been a partizan of reaction, although hitherto publicly professing liberal principles, had resigned the Ministry of Ecclesiastical Affairs on the 10th May, from avowed opposition to participate in the War of Independence, and was at this time so high in his sovereign's favour, that on the night of the 14th, just before the general resignation of the Cabinet, he was proposed by the King for the Ministry of Finance, a request to which his ancient colleagues, however, refused to consent; and he actually did fill this office in the Cabinet erected on the following day by the triumphant King on the corpses of his subjects. As this preparatory meeting was afterwards made the ground of criminal accusation, it merits consideration, by whom it was originally convened,—the more so, as on the trial of those charged with having instigated the revolt on the 15th of May, it was proved, by such overwhelming evidence as to extort the grudging notice of even a Neapolitan court of law, that Ruggiero was seen defending a barricade; so that the Government was forced to include him in the indictment, although it connived at his escape into Tuscany. At this meeting the deputies learnt from him that a royal proclamation was at that moment at the printers, which announced that they would

be called on to swear an oath, the wording of which was not given, but which was understood to oblige them to maintain the statute of the 10th of February without change. Now this, it must be recollected, would have destroyed the right of Parliament to decide upon the final constitution of the House of Peers. A deputation consequently hastened to the Ministers, who satisfied its members that there was no ground for the assertion, since the King had readily assented to their proposed arrangements for the ceremony, in which no oath of the sort had been introduced. Nevertheless, the official Gazette, in the evening, published a programme, countersigned by no Minister, which actually contained the objectionable clause. This, of course, caused much excitement; and the deputies having re-assembled on the evening of the 14th, put themselves again in communication with the Ministers and the King. In spite of their willingness to swear any oath which might not be incompatible with their just privileges, the deputies failed in all their attempts to arrive at an understanding with the King, and the Ministers at last tendered their resignations. The deputies, nevertheless, continued their honest efforts, until at a late hour of the night, the Minister Manna brought them from the King a message, that he would open Parliament without requiring any oath until one had been decided upon by the united Legislature; when, just as the welcome solution of all difficulties was being loudly hailed, strangers rushed into the hall with the cry that the troops were marching with hostile intentions, and the people were erecting barricades. The conduct of the deputies on this occasion was admirable. A chosen commission at once hastened into the streets to appease agitation by the announcement of the King's concession; and, in most instances, their persevering efforts succeeded in having the barricades at once removed. The often repeated assertion, that there was no menace on the part of the troops which could irritate the people, is refuted by testimony removed beyond suspicion, namely, the official report of the Commissioners sent by the Swiss Government to investigate the conduct of their regiments on that day. In that report it is distinctly stated, that between *midnight* and *morning* the troops sallied three or four times out of their barracks,—consequently, during the very time when nothing was going on but peaceful deliberation between the King and deputies.¹ When, early on the 15th, the Ministers, whose resignations had not been accepted, repaired to the palace to obtain the King's signature to a proclamation publicly confirming the determination he had communicated to the deputies, they found, to their no small dismay, that he had again changed his mind. In vain Manna de-

¹ The whole of this most important report is printed in Leopardi's book, at page 272.

claimed against this piece of bad faith. The King seemed immovably bent on refusal, until suddenly, near eleven o'clock, he all at once changed his purpose again; and having signed and sent to the printer a perfectly satisfactory proclamation, he despatched orders for the troops to be withdrawn within their barracks. Hardly, however, had the Ministers got beyond the threshold of the palace, rejoicing in the belief of having succeeded in preserving the peace of the country, when their hopes were dashed by the sound of firing; and one of the most terrible battles ever witnessed in the fearful annals of civil war had been begun, beyond power of suspension. The first shot is stated to have been fired by a police agent, not on the authority of anonymous assertion, but on the distinct deposition of honourable men, who fearlessly persisted in their affirmations, although to their own hurt. The venerable Saverio Barberisi defied the Procuratore-Generale to disprove the fact, that the well-known police commissary Merenda, and his sons, had not only been actively engaged in constructing barricades, but that the latter had fired the first shot. A still more confounding testimony was borne to the complicity of the police, when the priest Leonardo Covelli, native of Trani, taken up as participator in the insurrection, and detainer of forbidden arms, was discharged on the first count by the Great Court of Naples, on a certificate from Merenda that the said Covelli, being his agent, had by his orders taken part in raising barricades; after which, the priest having been summoned on the second charge before the magistrate of the quarter of San Giuseppe, where he lived, Merenda sent a fresh certificate that the arms were his, and Covelli was accordingly set at liberty on the 26th May 1849. What the number of killed may have been, it is impossible to state with certainty; but, alone, eighteen Swiss officers fell. The horrors perpetrated by the troops caused an universal outcry of indignation; and the official report of the Swiss Commissioners, favourably biassed as it is, remains an official testimony to the truth of reports. The pillage is stated in it to have been general. Far more frightful things, however, than pillage were committed. The Swiss report, restricting itself to investigation of the acts of the Swiss troops, only mentions the wanton murder of Padre Rodio, in his convent; but during the night of the 15th to 16th, long after the cessation of all hostilities, a body of marines shot in the moat of the Castelnovo a batch of prisoners, whose numbers are not accurately known, but amounted, on credible authority, to at least upwards of twenty. On the 16th of May a proclamation was issued, countersigned by the new Ministers,—all of them men well-known to have been the King's intimate counsellors during the fray,—in which occurred the following passage: "The Legis-

lative Assembly, whose meeting was rendered impossible yesterday, will be immediately convoked by another decree, in order to strengthen, by its weighty aid, those principles of order, legality, and general welfare, which are the prominent objects of the care of the King's Government."¹ Yet the very next day a decree shamelessly annulled all the elections, although no dissolution could be legally pronounced until the Parliament was duly constituted by having been actually opened; and Naples was declared to be in a state of siege, the National Guard having been already suppressed on the 16th. As news, however, arrived that the provinces were manifesting a dangerous agitation, the King deemed it prudent to issue the following address, the solemnity of whose spontaneous protestations might have wrung belief from minds far more incredulous than those of the trustful Neapolitan people:—

"Profoundly grieved at the horrible event of the 15th May, it is our liveliest wish to soften its consequences as far as possibly lies within human power. It is our firm and immutable will to maintain the constitution of the 10th February, pure and immaculate from every sort of excess; so that, as the only one compatible with the true and present wants of this part of Italy, it may become the holy ark on which the destinies of our beloved people and of our crown are to repose. The Legislative Chambers will be immediately called together; and the wisdom, firmness, and prudence which we expect to find in them, will be to us of mighty help in all those branches of public administration which are in want of wise and useful re-organisation. Take up, therefore, again your wonted occupations; put an unlimited trust in our faith, and in our sacred and spontaneous oath; and live in the fullest certitude, that it is the unceasing pre-occupation of our mind to abolish, as speedily as can be, not only the exceptional and temporary situation in which we find ourselves, but as far as it is possible the very memory of that fatal disaster which has befallen us."

"FERDINAND."

"NAPLES, 24th May 1848."

Trusting to these solemn assurances, the deputies used their best efforts to discourage the spread of revolt, which in Calabria had already become formidable; and on the 1st July, having all been re-elected, a royal speech actually inaugurated a session which was to be a series of insults. Having voted an address to the Crown, the language of which breathed the moderation of true patriotism, the King refused to receive it; and, after slighting the dignity of the members in every possible manner, he abruptly prorogued the Chambers on the 5th September, first to the 30th November, and afterwards to the 1st February. The same conduct was pursued during the second session. Embol-

¹ Leopardi, p. 190.

² Leopardi, p. 192.

dened by Charles Albert's utter defeat, and the extinction of the Roman Republic through French intervention, the King at last relieved himself of all importunity by a dissolution, proclaimed on the 13th of March. It was not, however, done with sufficient secrecy to deprive the Chambers of a final opportunity of manifesting patriotic forethought; for, as soon as the royal intention became known, they hastily legalised a royal decree which had arbitrarily modified the electoral franchise, being determined that their conduct should fail in supplying the King with any plea for erasing from the statute-book the form of constitutional government; an object which has been in so far attained, that no decree has ever appeared which pretended to revoke the one of the 10th February. The two first acts of the King after his victory of the 15th, were the establishment of martial law, and the liberation of some seven hundred prisoners, without even retaining a register of their names. The incongruity between these measures is heightened by the immediate institution of a Court of Inquiry into the origin and events of the conflict, which, one would suppose, might have derived useful information from the examination of men who must have been at least witnesses of the fray. Our surprise, however, increases still more when we see the inquiry pursued with the greatest possible show of investigation, affidavit being heaped on affidavit, and witness summoned after witness, while yet not one of these prisoners was ever inquired for. Finally, the Procuratore-Generale sent a long report to the Grand Court, in which, after much vague declamation on events previous to the 15th, which threw no light on the principal matter in hand, he finished with the remarkable words, "that all further research to arrive at the origin of that untoward event would lead to discoveries displeasing to Government."¹ The Great Court, after maturely considering this report, and postponing for future decision the very important question, whether, according to the 48th article of the constitution, it were at all competent to judge the case, came, on the 10th of July 1848, to the opinion, that there was ground to investigate the legality of the conduct of six deputies, who, having been chosen as a commission by their colleagues, had tried to stay the fight; that a certain Dardano, a noisy demagogue, confidently asserted by most respectable witnesses to have been a police spy, should be kept under examination, along with two companions of his, for having distributed inflammatory appeals; and, finally, it issued warrants against six persons as makers and defenders of barricades (all of them being either killed or out of the kingdom), committed two others on the same charge, decreed further inquiry

¹ Leopardi, p. 489.

with regard to a third, and ordered a fourth to be set at liberty. This judgment, the upshot of long and anxious inquiry, was shelved in the archives of the Court, both the President and Procuratore-Generale having given a deliberate opinion, that the events of the 15th of May would not admit of a criminal prosecution. ●

Meanwhile the reaction grew in strength and audacity; and when Langobardi became Minister of Justice, the criminal Courts were reconverted into special ones, although these had been abolished by the constitution. Everywhere prosecution was spreading its net; and it was determined that, in spite of the failure of the original investigation, the 15th of May should yet be made the means of strangling the flower of the kingdom, as already it had successfully strangled its liberty. On the 7th of September, General Turchiarolo, noted as one of the King's most devoted agents, being seated in the guard-house of the Palace, in conversation with a certain Niccola Barone, the latter made a deposition, full of the most astounding charges of active participation in treason, against no fewer than sixty-five well-known individuals, most of whom had been fully examined by the Court of Inquiry without incurring a speck of suspicion. Barone's accusations amounted to nothing less than that, on the evening of 14th, from the balcony of the hall of Montoliveto, the meeting-place of the deputies, fourteen of their number, whose names he gave, first called on the people to raise barricades and attack the troops, while others perambulated the streets, exciting the people to violence, and encouraging them by their example; and that, when hostilities had commenced, the deputies pronounced the deposition of the King, destroying, in their revolutionary fury, the very images of royalty which happened to be in the hall, amidst loud cries of "Long live the Republic." No less than nine of the persons whom Barone swore to having seen actively engaged in treason, were at that very time, either absent from Naples, or closeted with the King in their official capacities. In truth, the bungling stupidity with which this false accusation was got up, after sixteen months of preparation, is incredible, and almost enforces a belief that the Government sought to show how it could break through every obstacle, and trample under foot all justice. Domenico Muratori, whom Barone swore to have seen exciting the mob, was then at Reggio, being Intendente-Generale of its province; Leopardi was in Charles Albert's camp, as the King of Naples' ambassador; while Giuseppe Massari's absence in Lombardy was proved by an extract from the registers of the police office in Milan, signed by the Austrian director Wagner, and certified by Baron Metzbourg, afterwards Secretary of Legation at Turin. Encouraged by the reception given to his

testimony, Barone soon amplified it by increasing the number of accused to seventy-five. At the same time he corrected his former affidavit by the confession, that "through mere slip of the pen," he had incorrectly inserted the names of *four* individuals. He however reiterated all his other accusations, citing in support thereof certain witnesses; and then added the following charges, which were entertained by the Magistrates without remark, and which we give in his own words, lest English readers should involuntarily be led to think that we must be distorting the truth:—

"With regard to the third fact, namely, the positive participation in the building of barricades and in the conflict, I was eye-witness thereof, having happened to be in the middle of the Toledo on the night of the 14th May, when the barricades were being raised, and having taken shelter in the morning of the 15th, as soon as the conflict commenced, in the second floor of a house in the middle of the square La Carità, which house I am at a loss now to point out precisely, but which, to the best of my recollection, is in the palace attached to the first gateway in the great Piazza, on the left hand, whence we could clearly descry everything that happened in the Toledo, as far as the eye could reach. . . . As for the fourth and last fact mentioned in the former affidavit, having reference to that which happened by the decision of the deputies, assembled in their hall at Montoliveto, I can also declare myself to have been a witness, along with Carpentieri, Passanté, Auzalone, Ferrara, and Caccavale, who were in my society, since they also were in the same house, which had windows as well facing the Toledo as the inner side of the Piazza of Montoliveto; and as a balcony juts out into that piazza from that building of Montoliveto in which the deputies were assembled, at a short distance from the above-mentioned house, so the resolutions of the deputies regarding a provisional government or committee of public safety, and their other decisions, being successively cried out from the balcony, by an unknown gentleman at the top of his voice, to the crowd of armed people stationed in the neighbouring palaces, which likewise have balconies and windows jutting out into this piazza, deponent, and the others with him, were able to hear and observe what was resolved and done by the deputies."¹

Where is the country in which such evidence as this would be received, where an honest magistrate would be satisfied to believe that a man intimately acquainted with the locality of a town should be unable to indicate the house in which, according to his own statement, he had spent, under so remarkable circumstances, the greater part of, probably, the most memorable day of his life? Not only were none of the other witnesses said to have been with Barone in the house, interrogated as to its identity, but the public prosecutor was so thoroughly aware that from no house on the

¹ For Barone's depositions, see Leopardi, pp. -501.

Largodella Carità could it have been physically possible to hear and see what was professed to have been heard and seen, that when the prisoners challenged an examination of the spot, he positively objected, and the servile minions who had been thrust upon the judicial bench had the audacity to overrule the request. Of the fifteen witnesses who appeared in support of the charges, six were, as far as we know, free from positively criminal imputations, although notorious as spies; but the history of the others, who were the principal ones, is the following:—

1. Niccola Barone, the chief informer and prompter of the rest, was in open court denounced by the venerable Saverio Barberisi as having himself taken an active part in the rising. Barberisi, who in the troubled days of 1848 had patriotically consented to contribute towards the peace of the capital by being Prefect of Police in one of its quarters, proved, from the entries in the registers of his ancient office, that Barone had at one time received the daily pay of twelve carlini as spy. This is not, however, the worst part of his career. Five different times had Barone appeared before the courts for the crimes of fraud and theft; and yet Morelli, President of the Court, had the unblushing effrontery to address him publicly as “My dear Friend.”

2. Carmine Anzalone had been twice charged with aggravated theft and homicide.

3. Pietropaolo Carpentieri had been twice accused of acts of aggravated theft.

4. Luciano Carpentieri, three times charged with complicity in murders.

5. Francesco Vittoria, four times accused of forging documents and libel.

6. Gennaro Ippolito, twice accused of desertion and theft.

7. Raffaele Violante, eight times accused of exaction—of attempt to bring about abortion—of libel and assault.

8. Domenico Ferrara, once guilty of forgery.

The last witness was Paolo Emilio Caccavale, whose interrogation revealed truths that for a moment even disconcerted the so-called judges. This man, having gone, like many others, in fancied obedience to the sovereign's desire, as a volunteer to Lombardy, had on his return to Naples contrived to escape the imprisonment which befell most of his companions, by keeping himself closely hidden. While thus dragging on a precarious existence in daily want and fear, Niccola Barone, who had found out his situation, assured him that, if he would confirm by his testimony certain depositions he had made merely for the purpose of frightening a number of deputies, and inducing them to leave the country, he could not only free himself from all fear of molestation, but also receive a handsome salary. Yielding

to the temptation thus put within his reach, the unfortunate man acceded to the request, with the firm determination, however, to reveal the truth if he saw any attempt to use his testimony for a different purpose than that mentioned; and accordingly, when called upon by the Procuratore-Generale Angelillo to give his evidence in the public court, he made this statement, backing its correctness with the muster-roll of his regiment, which proved his presence at Treviso on the 15th May 1848. This was not yet, however, the whole of his revelations. Angelillo having involuntarily ejaculated, in the discomposure of the moment, how he could ever have brought himself to name falsely so many persons and things without knowing anything about them, Caccavale replied, "I spoke none of these things, and I named none of these persons. President Navarra, holding in his hand the deposition of Barone, dictated all himself to his scribe." Whereupon Angelillo, frantic with passion, ordered him forthwith to be thrown into prison as a false witness, and no further inquiry was allowed into the subject. Nor was this the only example, in this suit, where the case of the prosecutor thus signally broke down. Domenico Ferrara, yielding to the compunctions of conscience, retracted his written deposition, with the exclamation "that it contained lies dictated by Barone;" and although Angelillo behaved towards him with such threatening fury that the poor man swooned with alarm, yet he persisted in his recantation, and even began to communicate such unwelcome information, under the pressure of cross-examination, that Angelillo ordered him to be removed, in spite of the protest of the defendants. The reader must be already thoroughly sickened at such a tissue of infamous outrages; and yet we wish to adduce one instance more, taken from the same trial, to show how the Neapolitan Government is systematically forced to seek support in the corruption of its servants. Against Luciano Carpentieri's testimony to events which he professed to have beheld while perambulating the town, the defendants brought into court the testimony of the muster-roll of his regiment, and the very certificate of his colonel which had procured him *double pay* for services rendered, while under arms, during the whole of the 14th and 15th of May. Taken aback for a moment by this unexpected objection, the prosecutor asked Carpentieri to reconcile the apparent contradiction. His answer was, that his sergeant and captain (both of whom he named) would be able to explain how it might be possible for him to be absent, while supposed to be serving with the Guards. They were both accordingly summoned, when the sergeant declared himself unable to give any explanation, as Carpentieri did not belong to his company; while the captain only said that a soldier might by

possibility be inscribed, through error, on a muster-roll as present, while really absent. Now, by Neapolitan law, a false entry on the muster-roll of a regiment is punished with strict confinement; but on this occasion there was no inquiry whatsoever instituted into the facts of the case, and, on the strength of the captain's words, Carpentieri's evidence was ordered to be held valid. Under the auspices of such informers, the prosecution soon attained monstrous proportions. The arrest of one person brought with it the imprisonment of a host of others—very often merely because they were acquainted with him, and the jails all over the kingdom thus became filled to repletion. The criminal provisions of Neapolitan law are framed with all proper care for the rightful interests of the accused. Within four and twenty hours after arrest, the official prosecutor has to investigate the prisoner, and *within the shortest possible time* make a report of the case and presumptive evidence to the Court, which, then acting like our grand jury, decides whether there be reason to entertain the charge. The trial itself is in open court; and the prisoner is not only allowed to defend himself by counsel (the latter's presence being granted also at the preparatory examination), but he can likewise present a written statement, and the law expressly orders that every facility should be granted for its composition. Now every one of these provisions was outrageously violated by the Government. The prisoners were kept in prison, merely on suspicion, from September 1849 till December 1851. Space forbids our entering into details as to the patent innocence of most of the prisoners; we can only indicate a few facts that may enable English readers to form a conception as to the characters of the men thrust into the felons' dock. At the head of the list of the accused, which, after omission of those absent, counted nine deputies, stood the name of Archdeacon Luca Samuele Cagnazzi, ninety years of age, a man distinguished all over Europe for learning, especially in the science of political economy. At the meeting of the deputies he had been called to the chair by seniority, and had behaved throughout with dignified moderation. Age gave way under sufferings; and before the crowning infamy of mock trial was set as a finishing stroke to those incurred during two years of preventive confinement, death freed the old man from further outrage. To his companions in misfortune, and his peer in character, the venerable Don Saverio Barberisi, upwards of seventy years of age, it was reserved to quaff the cup of iniquity to its dregs. The defence of Barberisi is, in truth, the capital fact of the trial; and the minions who soiled the bench of justice trembled in their seats, as with unflinching sternness he rent the veil of flimsy speciousness hung around the truth, and bared its hideousness to

sight. Barberisi was a man learned in law, and of such unsullied integrity, that though he had long ago forsworn office, and irritated the ill-will of Government, calumny had never dared to cast a slur upon his character. From 1806–20 he had filled high offices, and even been Governor of a province; but, as he himself said in his defence, the events subsequent to that year drove him from employment, “along with the best men who ever filled the magistracy of Naples.” Having removed to the capital, he practised there as a lawyer. “Nor, amidst the many events that happened, was his name ever inscribed on the registers of the police.” The constitution was hailed by him with delight, and he willingly gave the best co-operation of his zeal and experience towards the orderly establishment of the new system, even to the acceptance of the burdensome part of Chief Magistrate of the city district of Montecalvario, where he displayed an energy not to be expected from his age. “After,” he said, “his Majesty had promulgated, in the name of the triune God, the constitution of the 10th. of February, I had various occasions to see his Majesty, and to be enabled to make a request for his own interest and that of the country. His Majesty knew me from my having many and many a time presented to him petitions having reference to the affairs of my clients, and he did me the honour to call me *his old friend*. Moreover, in the presence of many generals and distinguished persons, he insisted that I should frequent the palace, which would be always open to me; and never shall I forget his words, ‘Don Saverio, this house is thine—at all hours open for thee, and it will be verily a displeasure to me if thou dost not come every day.’ In all my conversations with the King, I never spoke of myself and of my position; my prayers had all reference to the advantage of his Majesty and the country. ‘Sir,’ I said on all occasions, ‘my faith is in God, in your Majesty, and in the country—God, King, and people. Sir, I consider the good of your Majesty to be the same as the good of the people, and that the good of the people is the same as that of your Majesty.’ The King wondered how at my age I could be so active; and I answered, ‘Sir, God is with me; He gives me the strength to support such labour.’ I had promised the King, to inform him of everything which could have interest for constitutional government; and out of regard to a feeling of duty, often and often I told him, ‘Sir, the alarms seen and heard, the demonstrations made without object, are fomented and directed by Sicilians or by agents of the old police, blindly seconded by some ill-advised youths.’ His Majesty agreed to this. . . . The country was left to itself, and to the reaction, which, daily waxing in strength, was sufficiently active to spread the perfidious belief that the King was behaving

with bad faith. . . . These rumours increased, and I felt it a matter of conscience 'to mention them to the King; wherefore, frankly I told him the report which was current, and I forgot not to point out the sad results which could arise thence. His Majesty, full of just anger, raising his hand as high aloft as he could, and keeping his eyes moving from heaven to me, said with animated speech, '*Don Saverio, the constitution I have sworn to, and I will keep it. If it had not been my wish to give it, I would not have given it.*' . . . Every time his Majesty saw me, he spoke of Carlo Poerio as of the best, of the most virtuous, and the most devoted man whom he had amongst his subjects. Of me he likewise spoke to Poerio with the most flattering praise; and on all occasions his Majesty spoke a deal of good both of me and of Poerio. Meanwhile, Poerio is now in chains, and I am undergoing capital judgment! How many observations could one make! But evil times and circumstances prevent the fathoming of things which regard us, and all I say is, *Domine aufer impietatem a vultu regis.*"¹ In these simple words there lies an eloquence which must pierce every conscience to the quick. The condemnation of Barberisi, after his defence, was a matter of necessity. It was true that he had rendered great services to his country by repressing disturbances in Apulia, through his personal influence, and that he had only returned thence to Naples late on the evening of the 13th of May. The audacity of his speech exacted revenge; and accordingly this man, so illustrious and so venerable, was condemned to the ignominious death of a traitor,²—a punishment which was commuted into perpetual imprisonment in the Ergastolo, where, after ten days, he died.

On 8th of October 1852, five of the accused were set provisionally at liberty. But, as if the Court felt loath to see the work of prosecution at an end, and wished to reserve matter for future employment, it declared itself as yet unable to come to any decision with regard to five prisoners, whom it ordered to be consequently kept in prison till further proof might be obtained about their guilt. After three years of mock trial, a court countenancing open perjury and encouraging the falsest evidence, confesses itself unable to concoct even the semblance of a case against certain prisoners. The Court remanded them.

Amongst the five prisoners remanded, there were the lawyer Jacovelli and the surgeon Mollica. Jacovelli not only attacked the evidence brought against him with the close reasoning of one

¹ Atti e Documenti, pp. 140-42.

² This consists in proceeding to the scaffold barefoot, and clothed in a black robe, with a black veil over the face; while across the breast there is written in large letters, "Behold the impious man."

accustomed to detect fallacy, but he established, by the most irrefutable evidence, his doings, hour by hour, during the night of the 14th and the day of the 15th, on which, as he was returning home, he was wantonly wounded by the soldiery. Even Angelillo was unable to say a word against the witnesses he brought forward, amongst whom were the celebrated astronomer De Gasparis, and Capocci, Director of the Royal Observatory at Capo di Monte. Jacovelli had, however, not only confined himself to prove incontestably his innocence, he had also brought the most explicit accusations, tending to establish the fact, that police agents had designedly prepared the outbreak on the 15th of May. The statements he made were direct and unequivocal: he asserted certain things to have happened,—gave every detail about their event,—indicated by name the witnesses of each, amongst whom were persons of the rank of the Marchese Sersale and the Duke of Salandra, and, in vain, earnestly desired the Court to command their presence, that they might be interrogated and confronted with him. Such imperturbable persistence in not acquiescing in wrong was not to be allowed impunity; and the Government removing Morelli from the Presidency of the Court as a mark of its displeasure at Jacovelli's reprieve, appointed, in his place, Governa, who at the Court of Sta. Maria di Capua had earned for himself an iniquitous renown. One instance of this man's conduct will stamp his character. While presiding at the trial of those who were accused of having *intended* to destroy the telegraph at Aversa on the 15th of May, he condemned one Girolamo Frangenti of Sessa, a man advanced in life and much respected by his neighbours, to five and twenty years of irons, without *any* evidence except the bare mention of a person with the initials G. F. in a letter written by one of the prisoners. Governa forthwith inaugurated his elevation by ordering a fresh trial of Jacovelli and Mollica by the Grand Court, when, in obedience to his instigation, upon the *self-same* evidence, which, after three years' examination, had just been grudgingly confessed insufficient for any sort of conviction, these unfortunate men were condemned to twenty-five years of chains, and Governa reaped the reward of his judicial assassination by being promoted to the important post of Prefect of Police.

Let it not be supposed that we have dwelt at such length on the cause of the 15th of May because it is singular in its atrocious nature. We have specially dwelt on it because of the great interest attached to its subject and its victims; for the circumstances of its iniquities are common to all political prosecutions in Naples. Not *one* of the many which have been instituted can probably bear scrutiny without revealing matter to shock the simplest feeling of right; while their number baffles

calculation. Around this cause of the 15th of May alone, three or four monstrous prosecutions stand clustered, as about their parent-stem,—all of them equally false and outrageous. One of these, the trial of Poerio and others for an imaginary act, has been rendered notorious through Mr Gladstone. Another is the cause of the 5th of September, when a number of most peaceable and respected persons were tried for treason, whose only crime consisted in having cried, Long live the King and Constitution, on the day of the first prorogation of the Chambers, in opposition to a mob of Lazzaroni who shouted in favour of an absolute sovereign. This incident was the cause of forty-seven persons appearing in Court on the 4th of August 1851—that is, after *three years* of arbitrary and close confinement—to be tried on the charge of having conspired to overthrow the Government, their vociferous applause of which, as legally instituted and *then* actually in existence, had been the cause of their arrest.

On the 26th of August, the Court sentenced twenty-five of the accused to imprisonment in chains for periods varying from seven to twenty-five years; while it ordered the rest to be remanded for second trial, although the public prosecutor himself had demanded the provisional liberation of the latter. Two boys of fifteen having been brought forward by Paliotti, a police spy, who was one of the witnesses, ingenuously said, that they had been instructed by him what to depone. Navarra, furious at the confession, had them locked up for a couple of days in the prison of the Vicaria, when, on their persisting in the same story, he put them for a week in solitary confinement. Another witness, Luigi Crasta, having borne testimony that he saw Raffaele Valerio active in the crowd on the day in question, the latter proved, by the records of the police, that he was then already in prison; whereupon Navarra came to the rescue of the abashed informer, by the suggestion that he had probably meant to speak of another prisoner called Pasquale Valerio; and upon the witness's affirmative answer, in spite of counsel's vehement opposition, he commanded the prisoner to stand up, thereby affording Crasta the opportunity of becoming, for the first time, acquainted with the features of the person to whose identity he swore! On the 29th January 1849, the constitution being then not only not abolished, but in as full existence as it ever obtained, a large body of citizens celebrated the anniversary of the public demonstration which had induced the King to grant the statute of the 10th February, by making it a holiday, which they spent, as is the usual habit on such occasions in that climate, by walking about the streets, when an armed force met them in the Toledo, and as many as could be seized were imprisoned. The case, even in spite of Neapolitan perjury, proved so utterly

frivolous, that after two years the Court acquitted thirty-two of the accused; when, impossible as it must almost be for any person to believe such an iniquity, it yet happened that they all remained immured at the will of the Executive.

All the cases hitherto mentioned have happened in Naples; but it must not, therefore, be thought that the courts of the Capital have the monopoly of political prosecution. Such an idea would give a very false notion of the extent of Neapolitan injustice: every province is under the rod of calumnious defamation—every high court has been the scene of monster trials—every jail is choked with innocent victims, treated with terrible cruelty.

A certain Government official, Luigi Carloni, accused about thirty inhabitants of the village of Autrodoco, in the province of the Abruzzi, as members of a secret society, which was said to hold its meetings in the Father Guardian's room of the convent of the Padri Osservanti. This happened in May 1849, when the district was under military law; and consequently the prisoners, to the number of twenty, amongst whom were five brothers Castrucci, the own nephews of the informer, were brought before a court-martial, and condemned to from twenty to twenty-four years' imprisonment in chains as members of *some* sect, neither the name nor the object of which were ever mentioned. Soon after this, the other accused, including the Father Guardiano and the Gindice de Pace, were arrested; and, as martial law had been removed in the meanwhile, the case came before the *special* Court of the province at Aquila. Now this last batch included those whom the informer declared to be the chiefs of the plot; and yet even a *special* court, after examining every tittle of evidence, was obliged to pronounce the existence of the secret society a falsehood, and entirely to acquit the prisoners. The victims of the court-martial consequently petitioned that the same measure of justice which had been meted out to their comrades might be extended likewise to them, who had never been accused of anything but partial complicity in a design, now proved to be an invention; when the only answer given to the just application was, an order to remove them from the jail in which they had been hitherto confined, to the foul Bagni of Nisida and Procida, where they still are immured at this present time. This incredible piece of infamy has its parallel case in every town in the kingdom.

No province showed more political spirit than Calabria, and nowhere did the Government encounter more difficulty in bending the judges to its iniquitous desires. At Reggio, a petty officer in command of a simple guard having caused three well-known and respectable tradesmen of the town to be shot, on the pretence that they were Messinese in disguise, as they

landed in the harbour, on return from a business visit to the neighbouring village of Bagnara, the public prosecutor Albarella took steps to bring him before a court of justice, when General Nunziante made a strong report in favour of his subordinate, which caused the prosecution to be quashed, while Albarella was summoned to Naples, and deprived of his office. Soon an accusation was got up against him and others, as guilty of conspiracy against the Government; but, having luckily got information of what was brewing, he, along with most of the accused, succeeded in escaping out of the kingdom before the order for arrest was carried out. After six years of investigation, during which, suffering and desolation had been introduced into many a ruined and bereaved family, the Court, on the 28th December 1854, declared that there was no evidence that sufficed to institute a prosecution, and ordered therefore the depositions on hand to be preserved until additional information might be obtained, while it demanded that the warrants of arrest should not be suspended. Furthermore, as it was well known that many persons who had hitherto baffled the search of the police were still within the country, General Nunziante employed the infamous trick of a proclamation, calling on all to return home with confidence in his promise of a royal pardon, which was broken as soon as he found his victims within his grasp. Amongst those who, wearied by a life of outlawry, left the hiding-places which wide-spread sympathy had safely provided, and, to their own destruction, trusted their sovereign's word, was Domenico Muratori, nearly eighty years of age, who had formerly filled the high office of Intendente of this very province. Seized by Nunziante's orders, he was thrown into the Castle of Reggio, where, falling soon ill, he died without having been allowed even the boon of taking leave of his children.

We have hitherto restricted ourselves to pointing out how the simplest justice is daily violated by the persecution of innocent persons, without taking into consideration the prevalent reports as to fearful sufferings inflicted, not only on those already condemned, but, as a means of coercion, on those who are merely imprisoned on suspicion. Upon no point has the Neapolitan Government shown itself more sensitive than on that of these cruelties; and yet, in spite of its protestations, we are forced to the conviction, that the treatment habitually experienced by its prisoners is as outrageous to the commonest feelings of humanity, as the prosecutions themselves are contrary to justice. In the *Official Journal* of Sicily, of the 8th April 1857, a vehement but most clumsy refutation was inserted, which quoted the testimonies of three Poles to the great humanity of the prison arrangements inspected by them, as well as to the denial of the

prisoners ever to have been put to any suffering, when questioned by them. Now, why, when the Neapolitan Government could find so many respectable witnesses amongst its own subjects—men whose characters would have been a pledge for their word—it should seek the testimony of strangers, whose names and existence are so obscure as to baffle inquiry, becomes a matter of grave suspicion in the presence of the overwhelming evidence which is on hand for the truth of the reports. We shall not back our belief in them by the recital of individual cases, known to us on authority which, if named, would at once carry with it conviction, because imperative discretion would necessitate the omission of details which, while they would impose silence on all contradiction, would likewise enable the Government to suspect the source of information, and expose the givers thereof to its vengeance. The fact of Neapolitan brutality amounting to *torture*, in the full sense of the word, unfortunately requires no such special information for its proof—it stands chronicled in official documents. On the 10th of May 1851 a petition was sent to the Cardinal Archbishop of Naples, by ecclesiastics imprisoned for political reasons in the prison of San Francisco, which contains the following heart-rending appeal against the destitution they were made to suffer. “It was the custom in this establishment to grant the daily sum of six grani (not quite threepence) to each priest, under the pompous denomination of allowance. That we might not appear unruly and greedy, we for a long while kept silence about this allowance, which would not have sufficed for the sustenance of the lowest animal. From day to day we hoped to see the end of the cruel persecution we are made to undergo, and supplied meanwhile our wants by means of such aid as our families were able to give us. But alas! this detention has been protracted during several years, and has at last exhausted our means. It is impossible for us to live any longer; and we are reduced to this point, that we must resign ourselves to die of hunger. We have felt it more than ever to be now our duty to protest in defence of our outraged dignity. We claim the respect due to our sacred character, and we do so with the more earnestness, as we feel ourselves to be wholly free from blame—to be wholly innocent. Yes, Eminence, we say it with unflinching assurance—we are innocent, since, with the exception of a few individuals, all those who are, or who have been, locked up here, have either been acquitted after solemn investigation, or have been kept here without avowed reason, merely through persecution on the part of the police, while they ought to be sheltered from calumny, and even suspicion.”¹ This petition bore the fol-

¹ The whole of this petition will be found in M. Chatenet's pamphlet, “*Le Roi de Naples*,” pp. 40–42.

lowing signatures:—Vincenzo Caporale, canon and ex-rector of the College of Lamiano; Guiseppe Varriale, confessor and rector; Francesco Mistico, canon; F. Battasarano, priest; M. d'Ambra, do.; Raffaele Lanzono, do.; G. Guzzi, Doctor in Theology; L. Romano, priest; N. Marino, missionary; G. Tedeschi, priest; G. Magaldi, do.; M. Basile, missionary; G. Potenza, canon; G. Barberi, priest; M. de Blasio, do.; A. Scarciacavalli, do.; G. Morelli, do.; A. Miscia, do.; J. Candela, do.; F. X. Scarpino, do.; L. Lauzella, do.; S. Pizano, Doctor in Canon Law.

Should any still hesitate to place implicit reliance on these statements as being *ex parte*, and addressed to one whose position did not necessarily make him so acquainted with the truth as must deter from all attempt at imposition, such considerations will be at once removed by the fact, that a similar document was fearlessly presented, on the 22d of the same month, to the Criminal Court of Naples, without eliciting from it any special notice. These sad complaints, moreover, obtain fearful confirmation in an account of the sufferings endured by prisoners at Montesarchio, which was transmitted by some of their friends through our Legation to the English Government, and printed amongst the papers recently laid before Parliament.

The appalling picture of suffering set forth in these papers surpasses, in its repulsive hues, the simpler torture of Middle Age dungeons; and yet, because in this case torment is ingeniously inflicted by subtler means than the tangible rack or thumb-screw of olden times, the Neapolitan Government, relying on a play of words, indignantly protests, with impious invocation of all that is most sacred, against the calumnious libels which accuse it of habitual recourse to torture. It is, however, a fact, that suffering is habitually used, not only as a punishment for those who, rightly or wrongly, are at all events condemned, but also as a means to extort a wished-for confession from prisoners before they are brought to trial; and, consequently, whatever difference there may be in the mode of applying such means between the governments of the Middle Ages and that of Naples in our time, it remains established that it is still pursued; for unrefuted evidence to that effect was given in open court, on the trial of the lawyer Mignogne, the last great public scandal perpetrated, and which is the more outrageous as having been openly and insultingly performed in the face of Europe after the Congress of Paris. Mignogne, a man of most moderate opinions and respectable conduct, having been denounced as engaged in a conspiracy for bringing Murat on the throne by one Pierro, a spy, whose worthlessness was thoroughly revealed during the proceedings, was, after a year's detention, at last brought to trial. On the very first day he made a statement of the treatment he had undergone at the

hands of the police; how he had been insulted, beaten, and spit upon; and how, by order of the Commissary of Police, he had received fifty blows, in order to induce him to acknowledge the authenticity of certain forged documents. We could cite many such cases, and especially one where, for no other offence than a simple remark against the justice of some investigatory proceedings, the prisoner was subjected to such beating, by order of the police, that he died in consequence. We have, however, yet one document which reveals to us a glimpse at atrocities transcending all that has hitherto been indicated. A citizen of Palermo, present at the capture of the Police Office in 1848, made the following deposition as to what he saw there, the credibility of which is supported by further testimony, and the fact that the document was considered worthy of insertion in the Blue Book printed in 1849:—

“PALERMO, Jan. 20th, 1848.

“On the 20th instant, passing by the Largo Santo Domenico, I was stopped by a number of people who stood before the Police Office, at the head of which was one Silvestri, and now there is Arini. To my great horror, I found what follows: Fresh bones, living blood, flesh and human limbs spread about a secret chamber; and several instruments of torture and a trap-door were there, that indicated a human slaughter-house.

(Signed)

“G. ODDO.”¹

Mr Lyon, owner of the yacht “Fair Rosamond,” and who was sent with despatches to Admiral Parker, testifies, in his report to Lord Napier, that having visited the Police Office in question, he “found the secret door as described; also the small inner apartment containing the niches or shelves in which the skeletons were found, and the place as described. The bones and parts of human bodies had been removed, as many days had elapsed since the office had been taken.” Lord Napier moreover adds, in his despatch to Lord Palmerston, of February 7th, 1848, that Captain Key, of H.M. ship “Bull-dog,” at that time at Palermo, believed in the truth of these statements.

The Neapolitan Government has pretended to refute the calculations made as to the amount of persons involved in political prosecutions and subjected to penalties, by the publication of so-called Official Returns. The credibility of these is, however, utterly destroyed by such barefaced and bungling falsehoods as the setting down, for instance, in some provinces of actually more liberations than acknowledged accusations; while, should one even be willing to put faith in them as far as they go, they are yet avowedly imperfect, as only enumerating legal condemna-

¹ Correspondence respecting the Affairs of Naples and Sicily in 1848-9, p. 96.

tions, while hundreds, and even thousands, are undergoing the horrors of the most terrible imprisonment, although *acquitted*, or not *tried*. The province of Teramo, the *smallest* in the kingdom, with not more than 200,000 inhabitants, counted in 1851 above 2000 political exiles and prisoners—about 200 of whom were in chains. Leopardi, who was himself an inmate of San Francisco, the hospital specially allotted for political prisoners in the capital, shows that between March 1849 and 1852 no less than 4684 prisoners were admitted, amongst whom were 375 ecclesiastics. Moreover, a statistical table, inserted in the *Official Journal* of the 26th September 1851, makes the following remarkable admission as to the *condemnations* pronounced by the *special courts* alone during the two preceding years: 794 were in irons, it says, besides 86 priests, who were exempted from wearing the chains, to which they had been sentenced; 765 were in confinement, by which is meant close imprisonment; 1132 were *relegated mostly* to desert islands; 164 were exiled, and 1500 visited with inferior punishments. The correctional judges are there acknowledged to have despatched, during the same period, no less than 42,670 prosecutions for infraction of public order, while the military courts in existence at that time are not even alluded to. Since 1851 things have not improved; there has been no sort of amnesty to empty the prisons of their old tenants, while the spirit of persecution has been unrelaxed. In all the Government tables we have seen, there is, moreover, a most audacious omission with regard to the prisoners in Sicily, who are altogether passed over. Not only are the dungeons on that island choked to repletion, but it is the common habit of the police arbitrarily to transport obnoxious individuals to the desert islands that stud its coast, where they are exposed to the most abject destitution, being often without any shelter but such as they may find in the caverns of the rocks.

The exasperation of the Sicilians has grown in intensity since the sanguinary repression of their rebellion. Smarting under the sting of a defeat, doubly galling from its unexpected event, they are animated with downright hatred of King Ferdinand, so that the state of Sicily may be likened to that of a fettered lion panting to spring upon his jailor. Everything has been done to outrage and wound the feelings of the people; and even Filangieri, although Sicily may be said to have been his gift, was treated by the King with characteristic ingratitude, and deprived of his governorship, as soon as he wisely urged to make some better use of time than to devote it merely to disciplinary castigation. Yet Filangieri, in spite of his illustrious name, which deserved to be for ever coupled with justice and legality,

and of that sagacity which inclined him to think of more than the revenge of the hour, was not a ruler whose conscience recoiled from wrong. One instance will suffice to characterise his wanton disregard of right; and still his sway is now looked to as light by the Sicilians, in comparison to what they since have undergone. On the evening of the 27th of January 1850, there was an abortive attempt made at a rising in the Piazza della Fiera Vecchia in Palermo, which, being unsupported by any movement on the part of the people, ended of itself as soon as begun. Far from the scene of action, and after everything was over, some patrolling police arrested six men, not together but separately. Their names were Giuseppe Garofolo, Vincenzo Mondini, Ajello, Domenico Caldara, Giuseppe Garzilli, and Paolo Deluca. On the following morning, Filangieri convoked a court-martial, and sent the six prisoners to be tried by it; at the same time transmitting a letter, in which the following passage occurs: "The criminals I send you for trial are to have the punishment of death, which is to be fulfilled *to-day*, according to the third degree of public example,¹ in the Piazza della Fiera Vecchia, where the revolutionary outbreak began in 1848, and where the second attempt was made." No sort of evidence was brought to prove that any of these men had been seen to take part in the disturbance of the day before; they had been arrested in distant streets, and no arms, or any other indications, had been found on them; and yet not only were they condemned to death, but the sentence was so hurried that their counsel's harangue was cut short by the arrival of those who were to escort them to the place of execution, while they were not even allowed to take the sacrament, on the plea of want of time. After this interruption, Filangieri caused the inquiry into the events of the 27th of January to continue in its usual form before the Grand Court; and although he packed it according to choice, and summoned from Syracuse a certain Noce, notorious for his corrupt servility, to be its president, it pronounced, by six votes against two, that there had been *no conspiracy*, but merely a casual turmoil, while it utterly failed to establish the complicity of the six condemned even in the latter.

A country blessed by bountiful Providence with every beauty and every store of wealth within the compass of nature, but whose growth is violently stunted by the oppression of wilful tyranny,—a people frugal and good, docile in temper, and lovingly trustful in disposition; moreover, gifted with an intelligence of surpassing aptitude and readiness,—this people, sought to be systematically corrupted and diverted from probity and self-respect, without even, at such a price, being sure to obtain the

¹ That is the death of traitors.

privilege of enjoying its day of dishonour free from those molestations with which wanton cruelty now torments it at every turn, —these are the elements of that situation in the kingdom of the Two Sicilies which appeal for vengeance to mankind at large. It behoves Englishmen, moreover, to remember, that besides the impulse of human sympathies, there are also special and cogent reasons of national policy which should spur them to such active interest in the state of that country, as has been publicly manifested on the part of our Government by acts whereby it stands committed beyond regress. Under these circumstances, it is right to form a clear notion both of what lies within the scope of our national policy, as of what those with whom we have become connected may desire from us.

We are not a military nation; the project of continental conquest is repugnant to us, for it would thrust us into positions wholly unsuited to our habits. What we require is free breathing room for the representatives of our commercial enterprise. We must, therefore, watch that the high roads of the world's intercourse remain free, combat every attempt at exclusive empire, from whatever quarter it may come, and find our true interests furthered by the assured independence of nations within their natural limits. Nowhere is it more necessary that our influence be unimpaired than in the Mediterranean, which is a maritime highroad, enabling us to reach inland Austria, circulate freely through the Levant, and penetrate into the recesses of Russian hiding-places. But, if the Mediterranean is thus the position of all positions in Europe which it is the most necessary for us to maintain free from foreign domination, the kingdom of the Two Sicilies, from its central situation and resources, is that country of all others on its shores whose good fellowship and independence are to us of the most vital importance. This is so plain a truth, that, in ignorance of our habits, a settled belief exists on the Continent that we aim at the conquest of Sicily, although, were there a shadow of truth in the supposition, we might long ago have obtained it. What immense help we can derive from the kingdom of the Two Sicilies, and how great the injury its unfriendliness can cause us, is rendered evident by events in the French and Russian wars. In the former instance, our fleets were mainly enabled to achieve their successes by the positions afforded them through the ready resource of Neapolitan harbours and supplies; while during the late war, the malignant ill-will of the king signally crippled our strength, by withholding from us, during months of the most precious importance, those necessary stores, which he preferred to see rotting in granaries to his own people's loss, rather than permit their exportation to their and our common benefit. In-

dependently of these grounds of general policy, which must make us anxious to be on good terms with the kingdom of the Two Sicilies, the events of our former connection with it have put us in an exceptional position, which not only gives us a right, but in a manner imposes on us a positive duty, to watch its welfare and protect its subjects from oppression.¹

In spite, however, of England's inactivity when the Sicilian constitution was wantonly violated—a constitution which, in 1814, she had pledged herself to uphold—popular predilection for her was not laid aside in Naples. The Liberal party, conscious that she could not be expected to volunteer a revolutionary crusade, comforted itself with the belief that her co-operation would be granted as soon as some legal recognition of its demands by the King should afford a proper plea for interference, in the event of its being afresh violated. Now, since 1848, this standing-ground of recognised right has been acquired, and all the efforts of the Liberals have since then been directed, not towards any conquest, but towards the vindication of that which has been solemnly pronounced their own by the highest authority in the land. They do not even ask for any material change in the existing code of laws, which is excellent, and barely requires the slightest modification to be in unison with constitutional government. The sum total of their demands is, the request to have those institutions put in practice which are prescribed by Neapolitan law, and would ensure the observance of a jurisprudence long ago conceded, but now violated every day. The vindication of legality—not only moral but written—is the rallying principle of Neapolitan Liberals, and their war-cry, the Constitution of 1848, spontaneously bestowed, solemnly sworn to, and never abrogated. Amongst the papers laid before Parliament with reference to the recall of our Legation, there is an enclosure in Mr Petre's dispatch of the 10th of August 1856, which deserves careful perusal as the deliberate profession of faith and views of the Constitutional party, which, it must be borne in mind, is not merely a section of the opposition, but the embodiment of the whole intelligence of the country. A Republican party does not exist in Naples; and if the Muratists have grown to be more than a knot of plotters, they have only

¹ In the Memorandum published by Lord Hatesbury, on the evacuation of Sicily by our troops, and which bears date of 20th October 1814, it is expressly stated, that England, on the invitation received to that purpose, "became the protectress and the support of the new constitution;" while it is publicly declared, that, "in any temperate and prudent modification of the Government, England would willingly lend that aid and support which it may be in her power to afford," and that "she exacts only as a condition of this assistance that it be done by the Parliament itself, and that it be accomplished in a legal and constitutional manner!"

quite recently attained the semblance of a party through the partial accession of some Constitutionalists, dejected at the wavering attitude of England, and who, therefore, feel inclined to throw themselves into the arms of a leader avowedly ready to come to the rescue. In this remarkable document, attention is first drawn to the fact, that the present abnormal state of the kingdom is caused by deliberate transgressions of legality on the part of the King. "What Piedmont has lately been under the necessity of conquering by means of its Parliament," it is stated, "and at the expense of its amicable relations with the Court of Rome, Naples accomplished fifty years ago. . . . Thus it was that the Reform movement of 1847, which expressed a tendency towards progress in the rest of Italy, could in the kingdom of Naples only express a tendency towards consolidation and guarantees. What elsewhere had yet to be obtained and sanctioned by law, in Naples had only to be secured by fact. The reforms existed; the practice of the administration had only to be placed in conformity with them." Having then drawn a picture of the contradiction between prescription and reality in the country, it continues,—“What is the practical solution of such a complicated state of things? Where are the elements of the future existence and repose of this important portion of Italy to be found? Reason and public opinion are fully agreed on this point. Now, as in 1847, it is a question of guarantees, not of reform. If the civil and political conditions of society in the kingdom of Naples have grown, *de facto*, infinitely worse since 1847, *de jure*, they have considerably bettered. The solution which at that period was to be sought for in concessions, or in a revolution, now exists in all the plenitude and force of the strictest legality. The Constitution of the 10th of February 1848, sanctioned and irrevocably sworn to by the King, has passed into the public law of the kingdom, and forms the complement, and, as it were, the sanction, of the entire system of the Neapolitan laws in general. . . . The cessation of arbitrary power, and the execution of the law, such is the motto of the honest and enlightened portion of the people in the kingdom of Naples, and that portion includes the great mass of its inhabitants. . . . It is useless to disguise the fact—the sole positive obstacle to the realisation of the Constitution in Naples resides in regions which, in the normal state of things, the influence of diplomacy alone can reach, and the interests of Europe conquer without a revolution.”

The events which have characterised the Government since 1848 are, in public opinion, so intimately associated with the King, that he himself is the “sole positive obstacle” to improvement; and it would be vain to hope for the restoration of confidence without his abdication in favour of his son. Still this is a de-

mand which involves no principle; the sovereignty remains in the rightful family, and a change, which must come in the course of nature, is merely hastened, while, by this one concession, that solution of the situation is attained which alone can assure the natural requirements of England, and, at the same time, the patriotic aspirations of the people of the Two Sicilies, both as members of an independent state and as Italians. It is the earnest wish of England, as repeatedly expressed, that the union between Naples and Sicily under one sovereign should not be dissolved; for its disruption would be attended with feelings of animosity, which could not but introduce lasting elements of discord into the policy of the Courts of Naples and Palermo towards each other, while they would rend the south of Italy asunder, and necessarily annihilate the probability of a strong and national government in that region, whose consistent independence would enable it to defy foreign domination, and thus become to us such an ally as we there require. If these general grounds have always made us anxious for the maintenance of the union, they must be much strengthened since recent circumstances have put Prince Murat in so prominent a position as a Pretender, that if a revolution should, indeed, violently compass a change of dynasty, he has a good chance of becoming king of the continental portion of the realm, while in Sicily he would never be accepted, so that the separation of the two countries is inevitable, if matters are allowed to go so far. The Sicilians, who would find it consonant to their interests to arrange matters with their present rightful sovereign, although King of Naples, on the basis of their old constitution, would utterly scout the thought of being taken in tow by the Neapolitans, and handed over to their new sovereign as a necessary part of his possessions. If the dynasty chanced to be overthrown, they would forthwith assert that independence, the recognition of which they would exact even from a Bourbon king of Naples, by the election of a sovereign of their own. And if the strong feeling entertained by the Sicilians against amalgamation with Naples might, perhaps, be got over by the common choice of a Piedmontese prince, the accession of Murat is the thing of all others to fan the sentiment of separation in their breast; for it awakens the national recollection how his father was steadily baffled in his attempts to reduce them to the same subjection as the Neapolitans. The establishment of Murat in Naples is, moreover, the introduction of a dynasty which, should it succeed in maintaining itself, must be as fatal to Italy as obnoxious to England. New and young, it will be driven to win its recognition from public opinion by a policy of its own, and a manifestation of its power; but as the true policy and power of an Italian

state should tend to the emancipation of Italy from Austrian rule, and as this tendency is, for the present, most completely expressed by Piedmont, which, from its position and conduct, has become the temporary leader of the Peninsula, therefore the Murat dynasty, in order to prevent itself from being absorbed in the vortex of Italianism, and drawn along as a mere follower of Piedmont, will be pushed into counterbalancing the attraction of the latter by the introduction of a foreign element of support, in the absence of any national one of its own. This foreign element will be France; and Muratism in Naples is thus tantamount to the enthronement of a tributary dependent on a new lord paramount from the one hitherto enjoying the suzerainty; and its effect will be the division of Italy into a northern and a southern camp, the former the embodiment of national feeling and patriotism, the latter, of a necessity, as much the vassal of France as ever any of the present states is that of Austria, with this amount of increased disadvantage to us, as is contained in the different importance between the maritime position of Naples and the inland one of Lombardy, and in the substitution of the venturesome spirit of French influence for the decrepit timidity of Austrian counsel. Relief from present physical suffering, through the accession of the dynasty of Murat, would therefore have to be bought at the sacrifice of those large schemes of national unity which are the vital element of Italian politics, and have been seized upon by the public opinion of the country with a singleness of purpose and energy that give the best hopes for the future. If the geographical site of Naples were indeed different, then, perhaps, one might think it possible for the house of Murat to compete with that of Savoy for the championship of Italy, thus producing a beneficial rivalry during the period of struggle for independence; but, as it is, this is rendered impossible. Piedmont is not likely to be able to consolidate the empire of Italy as an acquisition; Naples, as a state, will be, however, much less able to do so, and the selfish interest of a Neapolitan sovereign must, therefore, impel him to check the development of the Peninsula, which he can never hope to rule as his own, while its growth in independence would be a standing menace to his separate existence. These sad and inevitable results of the accession of Murat to the throne of Naples would be rendered still more pernicious by the events which must accompany the separation between Naples and Sicily; for the latter country would then, undoubtedly, choose a king from the family of Savoy, and thus envenom the unavoidable ill-feeling on the part of the new King of Naples at the loss of its possession, by a personal jealousy against the military leaders of Italy, which, by skilful handling of human susceptibility, he might

even instil into the breasts of his subjects, and thereby foster the only chance of an Italian support for his anti-national designs. The elevation of Murat to the throne of Naples is, therefore, to be deprecated as a most untoward event, setting up a government which, while it can never be called into existence without injury to *our* interest, by the establishment of French supremacy in regions where we require a friendly state strong enough to hold its own, would, likewise, introduce the poison of lasting ill-will between kindred communities, as, moreover, it could only maintain itself by cherishing, under a new form, that very state of anarchy and dispersion which have converted Italy into a hotbed of discontent, and a danger to the peace of Europe. All these difficulties would be at once avoided by a return to the Constitution; and that this solution would be as readily accepted by the Sicilians as by the Neapolitans is not merely a supposition of our own, but the conviction of men who are the leaders of public opinion; while it is a historical fact, that in the flush of what seemed an unlimited victory, they, in 1848, were ready to abide by the King's terms, as expounded by Lord Minto, although, at that time, the prospects of Italian unity were too vague to sway their considerations, and, consequently, nothing but innate moderation could have checked the separatist tendencies generally supposed to be so strong in Italy, and, above all, in Sicily. The Italian feeling is as keenly shared by the Sicilians as by the rest of their countrymen, and, therefore, they anxiously desire to see that solution brought about which alone can relieve them from present suffering, without creating a situation fraught with imminent risk for the future of Italy.

With noiseless but unfaltering steadiness the Liberal party in the kingdom of Naples has, consequently, during the last few years, directed all its efforts towards denunciation of the illegality of the proceedings of Government, so as to shut it within the circle of its hirelings, and as it were starve it into reduction by cutting it off from public opinion. Having learnt through bitter experience their inability to conquer the King in stand-up fight, as long as he has the resource of an immense army and a reckless body of mercenaries, while the whole power of Austria stands behind as a ready reserve which has never failed to hasten to his rescue, the Constitutionalists placed their reliance on the ultimately irresistible might of principle and legality, and tried to abash the insolence of injustice by steadily confronting every fresh outburst thereof with the mirror of undeniable law. Supported by the universal sympathy of the population, the clandestine press circulated through the country, determined through temperate protests against every act of arbitrary wrong, until the Government, foiled in all attempts to detect their authors, be-

came seized with fear and distrust of every one around it. It began to feel itself girt by an icy ring of isolation, within which it would perish, unless relief came from abroad ; for the unceasing energy of the Opposition was rapidly drilling public opinion into tactics fit for active operations at the proper day. This was the state of the kingdom when the deliberations of the Congress of Paris inspired the country with the hope of at last attaining its just desires. Conscious now of having won by the temperate course of their proceedings the good-will of Europe, as publicly expressed through its official representatives, the Liberals carefully avoided forfeiting it by indiscreet and premature action, in the conviction that when the great Powers of the world had once proclaimed an intention, they would not allow a petty sovereign's sullenness to baffle that resolution which had just proved sufficient to coerce the might of Russia. On the King's refusal to listen to the representations made to him, they consequently awaited with anxious expectation the announced arrival of the fleet ; for its presence would have proved that moral aid, which, after repeated defeats, incurred through Austrian succour after single-handed victory over the King, is necessary to encourage the people to fresh enterprise. Nor is this to be considered cowardice ; it is a prudence, the absence of which would amount to foolhardiness ; for against the overpowering force of numbers no courage can permanently command victory, while to hazard rash adventure, with the probability of a failure that must dangerously involve thousands, would be a positive crime. The noble and unhesitating declaration of Lord Clarendon, at the 22d sitting of the Congress, re-awakened the ancient faith in the irresistible authority of English influence. It was felt that the bare presence of the English fleet in the Neapolitan waters would not only inspire the energy of confidence into the breasts of the people, but, likewise, palsy the King's arm ; while the Constitutionalists were confident that their plans were so well matured, and public feeling so unanimous, that if the movement were once set agoing under such auspices, it would be accomplished without fault or incident to deprive it of that legality which they were well aware was a necessary condition for the, at least, moral co-operation of England. These just hopes have been cruelly disappointed. Instead of urging the simple request, that the law should be observed according to the prescriptions of the Constitution, the Western Powers made vague representations about an "amnesty," and "a new system of government;" thus forsaking, of their own accord, and without any reason, the unexceptionable standing-ground of legality for the doubtful and revolutionary one of suggestion. A still greater fault—and one which is to be especially deplored by Englishmen—was the

paltry and futile recall of our Legation, without any consequent action, when the despatch of a squadron had been announced with much publicity. The cause of this is well known; but, although the reasons for this change of purpose were weighty, under the complicated circumstances of our relations in other parts of the world, this does not excuse the unstatesmanlike indiscretion of having hastily engaged our political action in an undertaking which after-thought found at that moment to be objectionable. As soon as intervention in Naples became a matter of fact, the views of France and England were found to differ. As it was certain that a victorious revolution would break out as soon as the fleets arrived in the Bay of Naples, France declared that it could not withhold its support from Prince Murat, while England naturally refused to entertain a measure so suicidal to her own interests, and which was not even desired by the Neapolitan population. Nothing whatsoever has been consequently done. The loud flourish of protest on the part of the Western Powers was met by a sullen and impertinent rebuff, which, on their part, was answered by a huffy flight without exacting any reparation for the insult done them, or extorting any compliance with their demands. The impression at Naples is not one of mere disappointment at hopes once more deceived—a thorough change of feeling is beginning to come about, and a settled belief is spreading, that English authority is no more possessed of that resolute spirit as of old, and must henceforth be no longer looked to for efficient aid. Our moral weight—the talisman of our power—has woefully suffered by wavering conduct, which has allowed that to happen which it was believed could never happen, namely, that England would tamely put up with a slight, and forego the defence of her true interests, out of timid regard for paltry considerations. The injurious consequences of this impression on public opinion in Naples are already too apparent. The known reasons for England's inactivity have raised a belief in the readiness of France for action; and the simpleness of the solution then presented, which would be accomplished by *one* bold stroke—displacing one king for another, who is ready at a moment's call, and would bring with him all that auxiliary aid denied by England, is the cause that a Muratist party, which never existed before, is now becoming a reality. It is impossible to expect nations to continue to suffer such distress as that now endured in Naples, and to refuse an offer of immediate alleviation, merely because it may not be in every sense the most desirable, especially when you withhold the necessary means for acquiring any other relief. It is indeed melancholy to consider what sad consequences have already ensued from the behaviour of England on this occasion. Stung by despair, some of the more

ardent members of the Liberal party forsook that temperate line of conduct hitherto pursued, and rushed to seek relief in premature and criminal undertakings, to the no small injury of their cause. Milano's attempt on the King's life recovered for the latter, to a certain degree, that sympathy which human feeling never withholds from the victim of outrage; while Baron Bentivenga's untoward revolt compromised the chances of a successful rising by the dismay which always accompanies the failure of an abortive attempt, and which was heightened by the still rasher undertaking of Pisacane. Still, here again the Government, as always, has been unable to turn even a just occasion for punishment to its right account. The crime of the assassin, and the political fault of a rash conspirator, have been forgotten amidst the tortures and illegalities wantonly perpetrated on defenceless men. Not only was Milano subjected to horrible torments, which were borne with the courage of stern fanaticism, but a suspicious distrust, warranted by no tittle of evidence, has caused the whole of his family, and a large number of the inhabitants of San Benedetto, his native place, to be involved in the most unjust persecution; while Bentivenga, although he might have been with ease legally convicted of insurrection, was needlessly shot, with an outrageous disregard of the prescribed forms of trial.

The leaders of public opinion in the south of Italy cling with stedfast patriotism to views embraced by them, in the honest belief that they are for the true benefit of their country, and which they are unwilling to forsake at the temptation of inadequate though immediate relief, as long as there may be the faintest hope for their possible realisation. Looking to the emancipation of Italy from foreign yoke as the great and final object of all their efforts, they are loath to abandon the alliance of England in spite of repeated disappointments, conscious that the true interests of British policy in the Mediterranean go hand in hand with their own desires. The imminent solution of pending matters of weight must, of a necessity, speedily bring the yet unsettled question of Neapolitan politics afresh into the foreground of affairs. The present situation of the case is most serious, for it has passed from the possible prospect of future contingencies into the state of actual existence; and while the public feeling of the country has been worked to such a pitch by continued outrage, that one way or other it must and will obtain for itself relief from suffering, the events of the last few months have vigorously tended to realise the chances of an untoward settlement, hitherto deemed more than problematical. For this reason, it is of the greatest importance that the English public should be made well aware how English interests in the Mediterranean are, at this moment, at stake in the solution of

the Neapolitan question, and how small and legitimate an effort is all that is required on our part to obtain a result at the same time most necessary to us and thoroughly satisfactory to the Italians. England has implicated herself to such an extent in the intervention, that, for her own honour, she is unable to let it drop without some show of result. It is to be, therefore, earnestly hoped that, in this political action, from which she can no more disentangle herself, her language and attitude may yet be such as are worthy of her ancient standing. Let it be well understood, that it is not expected of her to interfere directly and aggressively by force of arms, although, in the event of complications, she might justly prevent any threatened foreign invasion by a determined menace of action on her part—all that the Neapolitan Liberals ask for is, as England has of her own accord intervened in the affairs of their country, that instead of faltering and whispered expression of good-will or vague suggestions for ameliorations, she should unequivocally and officially declare her opinion, that the re-establishment in practice of the Constitution existing in law, is the only solution of the situation which she can entertain; by which announcement, firmly and unhesitatingly expressed, she would forthwith rally public opinion, and infuse into it such feeling of confidence as would triumph over all obstacles. Moreover, the decided expression of this opinion would at once disarm all those untoward Muratist intrigues, whose only chance of success lies in the accession of a party dejected at the lukewarmness of England, while the conviction of her earnestness to stand by her words would arrest the action of Austria. England is not asked to head revolt; she is only asked to have the same courage to own her friends in the face of day, as Austria has ever had to own hers.

- ART. III.—1. *The Philosophy of Zoology; or, a General View of the Structure, Functions, and Classification of Animals.* By JOHN FLEMING, D.D., Minister of Flisk, Fifeshire, Fellow of the Royal Society of Edinburgh, of the Wernerian Natural History Society, etc. Two vols., with Engravings. Edinburgh: 1822.
2. *The History of British Animals.* By JOHN FLEMING, D.D., F.R.S.E., M.W.S., etc. Edinburgh: 1828.
3. *Molluscous Animals, including Shell Fish; Forming the Article "Mollusca," in the Seventh Edition of the Encyclopædia Britannica.* By JOHN FLEMING, D.D., etc. Edinburgh: 1837.
4. *The Temperature of the Seasons.* By J. FLEMING, D.D., etc. Edinburgh: 1851.
5. *On the Different Branches of Natural History, the Chairs which have been Instituted for their Illustration, and the Manner in which they should be Subordinated; being the Address delivered by JOHN FLEMING, D.D., etc., at the Meeting of the British Association.* Glasgow: 1855.
6. *The Lithology of Edinburgh.* By the late JOHN FLEMING, D.D., etc. Edinburgh: 1858.
- See also Separate Papers by Dr Fleming in the*
7. *Philosophical Magazine*,—viii. p. 52, xiv. p. 147.
8. *Memoirs of the Wernerian Society*,—i. p. 131, i. p. 162, ii. p. 138, ii. p. 145, ii. p. 238, ii. p. 339, iii. p. 83, iii. p. 174, iii. p. 400, iv. p. 485, iv. p. 498, iv. p. 564, v. p. 287, v. p. 303, vi. p. 384.
9. *Edinburgh Philosophical Journal*,—i. p. 97, ii. p. 82, ii. p. 271, viii. p. 294, ix. p. 248, xi. p. 287, xii. p. 116, xii. p. 238, xiv. p. 205.
10. *Transactions of the Royal Society, Edinburgh*,—ix. p. 419.
11. *Annals of Philosophy*,—Ser. 2, vii. p. 290.
12. *Brewster's Journal of Science*,—Ser. 1, ii. p. 307.
13. *Magazine of Natural History*,—Ser. 1, iv. p. 215.
14. *Edinburgh New Philosophical Journal*,—vi. p. 277, viii. p. 65, xix. p. 314, xxx. p. 236.
15. *Cheek's Edinburgh Journal of Natural and Geographical Science.*
16. *North British Review*, vol. ii., p. 297, and vol. xx., p. 501.

It cannot be doubted, that the educated mind of Scotland has been more largely devoted to the study of Theology than to that of Physical Science. Even a partial acquaintance with Scottish

history, and a comparatively limited knowledge of national literature, are sufficient to convince us of this. Not, indeed, that Natural Science has, during any long period since the Reformation, been left unrecognised in the provision made for the education of the upper and middle classes of society, or that it has been excluded, as some have alleged, from schools and colleges, from the fear that the faith of the nation might come to be shaken by its philosophy; for, even from the time when the Reformation began to influence the Scottish Universities, up to our own day, prominence has been given, more or less, to the instruction of youth, both in the highest departments of Mental Philosophy and of Physical Science. It is no doubt true, that the subjective character of much of the national Theology had, naturally, a very powerful reflex influence on psychological pursuits; and thus the characteristic devotion to Mental Science might be traced to the prevalence of theological learning. But no such connection can be alleged to exist between national attainments in Doctrinal Theology and the attention which, as we shall show, was given at a very early period to the cultivation of Physical Science. Minds which found satisfaction in dealing with the grand doctrines of predestination, of particular election, and of the absolute sovereignty of God, would feel at home in discussions touching theories of Consciousness, of Conscience, and of the Will; but such minds would not be natively drawn to objective Physical Science. Other motives must be sought for any provision which was made in early times for instruction in this branch of knowledge, and also for the partial character of such provision. That the attention of leading minds was turned to it at all, in seasons when there was so much, both in the condition of the Church and of the State, to draw them away from it, must be accounted for by the simple fact, that all who truly know God as a covenant God, will love to associate the work of creation with that of redemption, and to find in the Saviour of sinners the Creator of all things. And, if the prominence assigned to it was small, we must remember that it had not in Scotland, in those early days, or even in more recent times, any attitude of supposed antagonism to the sole source of the national Theology—the revealed Word of God. Questions of an ecclesiastical, of a theological, or of a politico-theological character, were the great questions of the day; and, like men truly wise in their generation, the leading men in the Church and in the State sought to put into the hands of their children weapons suited to the warfare to which they saw they were to be called. This must be held to be their defence in the face of any alleged charge of neglect of Natural Science. We are willing, however, to acknowledge that both the Church and the State suffered loss

in consequence of this partial neglect. The social progress of the nation was thereby retarded; and, not only did the Church lose much present influence over the people generally, by not actively helping to bring the aid of science to bear upon industrial pursuits (and thus to increase the material resources of the community, and consequently to put means of doing good within its reach), but when the time arrived at which she most needed that her true-hearted and accomplished children should, as instructed in science, be able to meet her enemies on the scientific ground which they had come to choose, she discovered that, while she had many who were equal to every work on the old fields of battle, she had but few who could meet the foe on this; and, but for these few, she would have been overwhelmed by the reproaches of gainsayers.

Few questions in historic criticism are more interesting than those which concern the special influences of certain sciences upon the social condition of a country. Theology, in its twofold character, as bearing witness doctrinally to Divine truth as a system, and practically to its power on the moral and spiritual condition of those who receive it, does not seem, if it stand alone, to lead necessarily and immediately to social comfort, and to industrial prosperity. • But when the Church acknowledges openly the suitableness of the truth of God to the body as well as to the soul, and professes her belief that deep spirituality may consist with attention to material comforts, she stands forth as receiving the arts to her embrace, and as claiming that the results of applied science shall be enjoyed as the gifts of Him whom she calls her King. Illustrations of these remarks, in the history of Scotland, will readily occur to our readers. There have been times when her testimony to some of the grandest truths of God was firmly held, and brightly manifested, by the holy and self-sacrificing lives of her people, in connection with a social condition which will ever be reckoned a disgrace to a professing Christian community. All who are acquainted with the literature, and especially with the pamphlet literature, of these older times, and who have read this in the light of the legislative acts and the fiscal regulations of the period, are aware that industrial pursuits were all but neglected—that agriculture was in a deplorable state, few of the lands being fenced, and most of the farms held in “runrig”—that the people were generally clad in coarse “drugget”—that their food mainly consisted of oat-meal and sour beer, and that their dwellings were such as most men now would not lodge their cattle in. When John Ray, the great naturalist, visited Scotland,¹ he seems to have been much struck with the low state of civilisation, and has left us a picture of it as true

¹ Itinerary, ii. (1661).

as it is graphic. Yet, in the midst of all this, the light of pure truth shone brightly out in the lives of the people, who were ready to testify, even by suffering, how much they loved that truth. With anything like general interest even in one branch of Natural Science, we venture to say that this state of matters could not have existed. And if we can now point to an improved, and an increasingly improving condition, we trace it mainly to the attention given by Christian men to those sciences which come loaded with blessing to a community, when they are cultivated under the smiles of the Church. This might readily be still further illustrated by looking at their influence when they are seen dissociated from, or held to be antagonistic to, revealed truth. In this case, men advance into a higher civilisation, while they fall into a lower condition of true national strength. The habits are refined, but the heart is left uninfluenced. Taste is cultivated all the more eagerly, when it is found that, not only can the sensuousness of man be thus gratified, but the conscience itself can be thrown into a life-long rest. But that nation only is truly strong in which the truth of God has much power. Our safety thus, in connection with progress in science and the æsthetic arts, will be found in ever setting the simple truth of Christ alongside of these. If thus associated, they will yield blessing, and the cultivation of them will be encouraged by religious men; but if not thus associated, they will increasingly interfere with the nation's moral strength. We frankly acknowledge, then, the great loss which nations holding the Revealed Truth sustain by the neglect of those branches of science which stand in such intimate relationship to the material and social welfare of the community. But we still hold, that if they obtained not in Scotland the prominent place which they deserved in the provision made for the higher education of youth, it was not because of blind devotion to abstract, or to merely theological pursuits, but simply because the demand for them did not seem urgent to the leading men in the Church and in the State. We confess to such an admiration of the men of these olden times—both on the score of their every-day religion, their scholarship, and their patriotism—that we cannot join with those who cry “naught” on every reference made to the past, and who hold that their educational arrangements were not even worthy of the time in which they lived. They were not men to overlook the necessities of their age. And as, in the light of their recorded deeds, we glance back on them, we cannot help reverencing those grand figures which, like the shapes in Ossian's Visions, seem all the greater as they glide past us in the mists of written and of traditional history. The men of old were men of might. Our knowledge of what they were in their day, leads us to conclude that,

other things being equal, when the time should arrive at which those partially neglected pursuits would be found more urgently needed, in connection with the highest interests of men, and especially with the defence of the integrity of the Bible as a revelation from God, their children, who had tasted the same waters of life as those at which their fathers had slaked their thirst, and over whom those grand truths had power which had possessed their fathers, and stirred them to noblest deeds, would be found ready for their day, and for their day's demand on them. At such a point, the strength in a long cultivated love for the Bible, and in familiarity with its contents, was sure to become manifest. When the battle for the truth was to pass from the field of Metaphysics into that of Physical Science, Scotland was to be forward in sending forth the most powerful and the most thoroughly accomplished combatants. Then all men were to discover that, not in vain had her statesmen stood strong for Christ in the midst of many temptations, and not in vain had her Church realised an elementary system of education pervaded by Scripture truth, and had thus cultivated in her children a love for the whole Word of God. A glance at the social and religious history of Scotland will show us this. When the battle assumed the form of a struggle for liberty in the Church or in the State, she had her champions, than whom no nation in the world could point to greater. When, after a long time of social inactivity and religious declension, about the middle and especially towards the close of last century, industrial energy began to awaken, and religious light to break in on prevailing darkness, the first effects of this were seen in men coming forth to do battle with the various forms of error, which were not only sapping the foundations of political morality, but were also seeking to destroy all religious life. One phase of this action will readily occur to us in the attitude assumed to the metaphysical scepticism of Hume. The apologetical literature of that period shows how thoroughly equal the Church soon came to be to the work of defending the cause of truth, and how soon she felt that the mere work of defence might be left, and the war made an aggressive one. But as Hume's works, and the host of inferior works to which they had given rise, had their power to hurt shaken or destroyed, it began to appear that the increasingly great attention which was being given to the study of Natural Science, both in Britain and on the Continent, was likely to lead to controversies of a more delicate, more difficult, and, we may add, more dangerous kind, than those even connected with the metaphysico-theological discussions carried on in consequence of the able writings of Hume.¹ These latter were, in their very nature, not

¹ The *English* aspect of these discussions has, perhaps, been too much over-

fitted to make quick progress. They were too abstruse for the general population; and before they could be distilled by the higher intelligence of the country into the vulgar mind, the work of thorough refutation had fairly begun. Besides, it is highly characteristic of Scotchmen in the middle ranks of life, that when the sound of controversies, carried on in regions into which they do not think themselves morally called to enter, reaches them, they are slow to identify themselves with any party which may even seem attempting to make out a case against the Bible, or against the way in which, by the light of the Shorter Catechism, they have been accustomed to read it. For many reasons we rejoice in this. In questions of Physical Science, however, this peculiarity becomes much modified. The appeal to the community is so directly through the senses on the phenomena on which great generalisations are built, that they are apt to find themselves pledged to these generalisations, without having intelligently gone over the points which are held to warrant them. Thus the necessity for prompt attention on the part of the Church, when discussions in Physical Science even seem to impinge on accepted theological opinions. The metaphysical modes of attack were not left when the physical rose into view. They met on the common threshold of dislike of the Bible as a true revelation—verbal and inspired—from God; and having shaken hands in token that their design was one, they passed together over the threshold of dislike into the wide, open field of direct and avowed antagonistic action to the Scriptures. Down to our day they continue united.¹

This aspect of the modern controversy has been far too much overlooked. Men are in danger of undervaluing the study of the higher philosophy—of decrying metaphysics—and of making the study of the physical sciences all in all. We suspect that it will ultimately be found—and Chalmers is a notable example—

looked by Scotchmen; yet we are persuaded that an acquaintance with it might account for several phases of present so-called religious action in England. See *Middleton's Free Inquiry*; *Hull's Letters*; and *Warburton's Letters to Hurd*.

¹ And their influence continues to be felt, though in forms under which it is not very easy to discover the original combatants. We all know the powerful influence which the scepticism of this period had upon German theology; and we know, too, the influence of the latter on the theological literature of Britain. The interaction has been decided, and the fruits cross our paths in every physico-theological discussion. The reins were laid on the neck of speculation, and very soon the whole Bible was dealt with in a way which soon found its histories to be *mythen und saagen*—mere myths and legends—and its doctrines to be only the intuitions of the highly developed man. This view of the earliest Scripture history seems gaining influence. Some, with Professor Powell, say boldly that Genesis 1. "was not intended for an historical narrative;" and others, under the power of traditional orthodoxy, say, The first chapter of Genesis is historical; but it is history *sui generis*, we have no other examples of such history in the Scriptures!

that all who have done any really effective work in the latter, have been men whose minds were thoroughly trained and disciplined in the former. These remarks might be very fully illustrated, but we must hasten on.

If the time came when the controversy assumed this altered form, so did the men who were to be signally able to carry it on in behalf of truth. But, as in this article we are dealing not only with Dr Fleming and his works, but with the history of Scottish Natural Science, we must again have recourse to retrospect. We have already promised to show the early attention which was given to this subject in Scotland. In our retrospect, there are three points on which we shall lightly linger. They occur in 1583, 1683, and 1793. We shall only glance at the standing facts; but, having gone over the ground with some care, we can promise the antiquary, who has a taste for the natural sciences, some rich reading, and not a few racy anecdotes, if he shall try to fill up these gaps of a hundred years with the less direct and important references to the state and to the study of Natural Science during them.

It will not be denied that the foundation of the University of Edinburgh, was, in its relation to the existing national Universities, the inauguration of a higher thought in regard to the education of youth than obtained before. Avowedly designed for the youth of Edinburgh and the neighbourhood in the first instance, the great men who took part in the commencement of it soon saw that it could not long be thus limited. Robert Rollock was brought from St Salvators,¹ St Andrews, to preside over it; and the scene which meets us, in looking back on the history of that time, is one of intense interest. Rollock's loving biographer, Henry Charteris, represents him as teaching his students very fully in the Word of God, and in the Catechism of the Palatinate (compiled by Melancthon's friend Ursin, 1563), along with the works of Aristotle; and he adds²—"To these he joined the principles of Arithmetic, instruction in Anatomy, and in the use of the Globes." Provision for teaching, we may say, Mathematics, Anatomy, and Physical Geography, was a good beginning for an Edinburgh University curriculum; and these, we love to notice, were wedded to the sincere, loving, childlike study and teaching of the Word of God.³ We have nothing like this now,—the

¹ The zeir of God Im. Vc. four'scoir thrie zeires. . . . Robert Rollock for the present ane of the regents of Sanct Salvatoris Colledge."

² "Exorsus ab Organo Logico Ethica Nicomacheia et Physica percurrit, quibus adjecet etiam Arithmetica principia, doctrinam de anatomia corporis humani, de sphaera, accurate exposito textu Joannis de Sacro Bosco, de geographia."—*Narratio Vitae et Obitus. Rob. Rollocki.*

³ Charteris mentions an arrangement which, as we meet with it at the foundation of the University of Edinburgh, might, we think, be strongly demanded

Church making a provision for the instruction of her youth in Anatomy! It has been often alleged, that the study of this branch of science marks our advancement beyond the point of view of our forefathers; but we cannot pretend to anything like what Robert Rollock, and the shrewd Magistrates of Edinburgh, in 1583, set about realising. It is worth remembering that the author of "The Treatise on Effectual Calling," and of the Lectures "On the Passion of Christ," gave instructions to his students in Physical Geography and the Anatomy of the human body. The year 1683 now rises before us; and Sir Robert Sibbald of Kippis, physician, antiquary, naturalist, politician, and theologian, passes across the scene. Any one who has looked over Sibbald's principal works knows that, though in many things too superstitious, he was one of those men who sought out the works of God as taking pleasure in associating them with their Creator. His correspondence with Wodrow testifies to this even more strongly. And there can be little doubt but that to him we are indebted for leading the way in those habits of close observation in Zoology and Botany, which now distinguish their students. His influence with the government of Charles II. was such, that he led it to take a lively and active interest in the cultivation of Scottish Natural Science, while he set a good example of this in his own method of prosecuting his favourite pursuits.¹ But, though we are dealing only with Scottish Natural Science, it is scarcely possible to leave out of view the influence which, at this period, the English naturalist, John Ray, had upon it. We cannot fail to trace that influence in looking at the Scottish literature of Science of that time. Ray's first purely scientific work—*Catalogus Plantarum Circa Cantabrigiam Nascentium*—was published in 1660, and his last—*Methodus Insectorum*—in the year in which he died, 1705. In the intervening period, no

by our University reformers, when the *perfect* plan shall be recognised. (!) It has reference to matriculation—"Habito examine plerique qui comperti sunt ad capessendum cursum philosophicum minus idonei, curæ Duncani Narnii, viri morum elegantia et doctrina singulari, ut eos exactius in literis humanioribus insequentium annum institueret, commissi sunt."

¹ In the very able and interesting address which Dr Fleming, as President of Section D ("Zoology and Botany, including Physiology") of the British Association, Glasgow, 1855, delivered to a large audience, he quotes the appointment of Sibbald by Charles II. to examine the productions of Scotland, in order to promote the study of Natural History.—"Cum nos regia nostra consideratione animadvertentes, esse in antiquo nostro Scotiæ Regno abundantiam eximiarum et utilium Plantarum, Animalium, etc.; quæ si nota essent, et eorum natura, virtutes et usus, plurimum conducerent ad variarum Artium, et Artificiorum profectum, et Medicinæ, ac Naturalis Historiæ Scientias multa promovere possent, quæ adeo necessariæ sunt ad Ligeorum nostrorum conservationem." We take this opportunity of directing the attention of our readers to the admirable statement in this address, as to what studies a chair of Natural Science should embrace.—*Edinburgh New Philosophical Journal*, vol. iii., p. 125, An. 1856.

fewer than thirty-five distinct works, or memoirs on scientific subjects, were given by him to the public. Without dwelling on the character of these works, or on the success of Ray in pointing the way to a correct system of classification—a system in which the arrangement of the lower animals shall not clash with the requirements of the higher science of mind—we cannot pass by his labours in the field of Physico-Theology, because these had a demonstrable influence on Scottish naturalists. This accomplished man was as noted in his day for his personal piety as for his attainments in science. His “*Persuasives to a Holy Life*” may yet be read with profit. Cuvier says of his “*Wisdom of God in Creation*,” “that in it he has well shown how theological studies can be combined with purely scientific pursuits;” and of his Discourses on “Chaos, the Deluge, and the End of the World,” that they contained a system of Geology ahead of the time at which he lived. His “*Physico-Theological Discourses*” led to the works of his friend and disciple Derham, which were much quoted in the apologetical literature of the beginning of last century. These were “*Physico-Theology*,” and the less known work on “*Astro-Theology*,” crude, indeed, in many respects, but valuable as illustrating the union between scientific and theological pursuits, and as indicating lines of thought which, in their influence, passed into Scotland. Our historical survey brings us to 1793—the year in which David Ure published his work;¹ in which we first meet with the true method of reading those wondrous legends written on the rocks—legends which lead our imaginations back to times so remote, that the very attempt to realise them is painful. The resting-point at which we can bear to look steadily at them is attained, only when we read that, “by faith we understand that the worlds were framed by the Word of God.” Some of our “far advanced” have come to hold that this faith, as to world-making and world-building up, is not needed, because reason must teach us the one, and we have everything as to the other so spread out before our eyes, that faith may stand aside and give all to sight! Ure was a probationer of the Scottish Church, and—“honour to whom honour is due”—The Scottish Church licentiate was far ahead of the scientific men of his day in the correctness of his estimate of the fossiliferous strata.

“These remains of ancient ocean,” he says, “become highly interesting when we consider them as furnishing us with an undeniable proof

¹ “*History of Rutherglen*,” by Rev. D. Ure. Glasgow: David Niven, 1793. It is well known that Dr Fleming had a very high estimate of the value of Ure’s labours. He refers to these frequently in the “*History of British Animals*.” See also Hugh Miller’s high testimony to Ure in his “*Fossiliferous Deposits of Scotland*,” p. 16.

that the earth, in some remote period, underwent a very great change." After characterising the absurd views held regarding these organisms, he continues :—"It is evident, on the slightest attention, that these bodies possessed organisation and life, in the same manner that shell-fish and other marine productions do at present. It is almost certain that most of them lived and died in the places where they are now found, and that these places were once covered with sea. From this view of them, some plausible theories of the earth have been formed, and a multiplicity of arguments drawn to illustrate the causes by which the great revolutions of the earth were brought about. Facts, however, are daily occurring which stand in opposition to most of these theories, and prove them to have been too hastily made. The more inquiries, unbiassed by theories, we make, and the greater number of facts that are undisguisedly related, the more able will mankind be to discover the phenomenon by which the globe of the earth was thrown into its present state. I can say, for my own part, that the more attentively I inquire into the subject, and the greater number of theories I consult, the more clearly I perceive the truth of the sacred theory given by Moses."

In this rapid survey, we have had mainly in view science as taught by Christian men under the countenance of the Church—science, in a word, with a theological relation—science in alliance with the exposition of "the great love wherewith God hath loved us." To have attempted to have pursued the history of the purely secular aspects of it, would, no doubt, have led us into fields of deepest interest, and have made us listen to wonders uttered by sober research with which imagination would shrink to deal; but this article would be far from sufficient for such a view. The labours of Hutton, of Jameson, and Murchison, and Lyell, will at once indicate how wide the field is on which we would require to enter. Limiting ourselves, then, to the consideration of Scottish Natural Science as seen in brotherhood with a living Christianity, and as professedly thus cultivated, there are some names around which we must linger lovingly for a little, before we come to that of Dr Fleming. The smaller birds fly in flocks, but the eagle goes forth alone. It is not thus either in the Church or the State. Generally, it will be found that great men come in groups. They are God's gift to any nation; and when He sends them thus, we should rejoice in them—see only their outstanding excellencies, and try to hide that in them by which "poor human nature" testifies that all such treasure is in earthen vessels, that the excellency may be seen to be of God. Besides, we seldom see their true greatness until they are taken from the midst of us. Scotland might be lawfully proud of such a group of men, whose scientific labours are associated with her Christianity, as that which contains the names—Thomas Chalmers, Hugh Miller, John Fleming, and David Brewster.

Any lengthened notice of the gigantic labours of Dr Chalmers in the field of Christian philosophy, would only be a repetition of what is known to all. From the time that we meet with him as the youthful chemical lecturer at St Andrews, when he brought so many young men, under the spell of his rolling eloquence, up to his ripe old age, we see the power which God had given to him for good. But while we would not enter fully on his manifold labours as the Christian apologist able to deal with several of the natural sciences, there are yet two or three sentences which cannot be quoted too frequently at present, when so many efforts are being made to cut the moorings which bind us to a safe shore in matters touching genesis and science, and to push us rudely out into a wild sea of darkness and of doubt:—

“By referring the origin of the globe,” he says, “to a higher antiquity than is assigned to it by the writings of Moses, it has been said that Geology undermines our faith in the inspiration of the Bible, and in all the animating prospects which it unfolds. This is a false alarm. The writings of Moses do not fix the antiquity of the globe. If they fix anything at all, it is only the antiquity of the species.”

Again—

“The present economy of terrestrial things was raised, about six thousand years ago, on the basis of an earth then without form and void; while, for aught of information we have in the Bible, the earth itself may, before this time, have been the theatre of many lengthened processes, the dwelling-place of older economies that have now gone by, but whereof the vestiges subsist even to the present day, both to the needless alarm of those who befriend Christianity, and the unwarrantable triumph of those who have assailed it.”

As days run on, we will learn more of how much the Church owes to Mr Hugh Miller. Though, after much study of his last labours, we cannot accept them as having made out a case for the views, of the reconciliation of the two records, which he had come to hold, we would not deny the “Testimony of the Rocks” a place in the scientific literature of apologetics. We receive that work as only one aspect of his labours; and we shall refuse to look at what he has done only in the light of his last work. They honour not his beloved memory who do so. On the contrary, we would associate that work with his earlier labours and achievements, and would regard it as being to these very much what the carved work is to the Corinthian capital—beautiful in its place, but which, if broken off, would yet leave the noble base and shaft standing forth in all their imposing massiveness and strength. We have not a shadow of sympathy with any who believe that Hugh Miller’s fame must stand or fall by the “Testimony of the Rocks.” Neither can we sympathise with those

who have mounted so high that they see only the carved work on the capital, and, in their admiration of that, would ignore and despise as naught that on which the capital stands! For ourselves, we say sincerely, that we would rather lose the hand with which we write than question the goodness or grudge the greatness of Hugh Miller. "The Testimony," however, confessedly deals with doubtful matters, and it is to be expected that men, who have gone over the ground surveyed by him, hammer in hand, and with a sincere admiration of Mr Miller, in their hearts, and who have seen the phenomena on which he builds so much, but which do not seem to them to demand his method of accounting for them, will rise up to tell their convictions on these points. Personal convictions of truth should ever have greater weight given to them than respect for the name and the memory of any man.

All rejoice that one of this remarkable group, Sir D. Brewster, still lives. Few men have at any time done more in making the very highest departments of science helpful to the every-day necessities of life; and we might point to many of his papers, in this journal, as proofs of the service he has rendered to the cause of Bible truth. May he still be spared with, as now, the admiration of many clustering around him, whom he has led into those paths of science in which nature has to be watched, lovingly waited on, wooed and won, before she will tell to man her secrets, and unfold to him those wondrous adaptations in her less known works which preach to us so forcibly of the manifold wisdom of God.

Dr Fleming was born in 1785, at Kirkroads, a small farm near Bathgate, Linlithgowshire, of which his father was tenant. His parents were noted for their industry, intelligence, and Christian worth.¹ The district in which Fleming passed his youth is one well fitted to arrest the observing eye, and to gratify the naturalist.² Its botany is rich and varied, and some of the

¹ His mother, Catherine Nimmo, is still remembered as a devout, christian woman. Fleming owed much to her instructions and example. On one point, however, they did not agree. Mrs Fleming was a devoted "Old Light" adherent, but John soon showed symptoms of a leaning for the Established Church. His mother did not much like this indifference "to the testimony;" but she liked less her son's indifference to the distinction between "The Old Light and the New." To her the distinction was vital, to her son it was as nothing; and she often sought to impress him with its importance. On one occasion her heart was on the threshold of joy. Returning from a botanical excursion in a moorland district, in which both bodies of Dissent had a chapel, John said:—"Mother, I have been making observations, and have found out the difference between the Old Light and the New." "Have you at last?" asked the mother with a glad look. "Yes," was the answer, in a style not unusual with him in after years; "Yes, the one church stands north and south, and the other east and west!"

² In a walk of not more than a mile from the meadow ground up to the wooded hills, we have found—*Ophioglossum*, *Botrychium*, *Scolopendrium*, and *Asplenium* (*felix femina*).

rarer birds of Scotland visit it, or have their haunts among its wooded hills.¹ Geologically, too, the district is deeply interesting, and, in some respects, unique. Bordering on the farm on which Fleming was brought up, is the Kirkton Limestone, first made generally known to men of science by the interesting memoirs of Dr Hibbert (Trans. Ry. Soc., Ed., vol. xiii.); lying under masses of green-stone and green-tufa, and dipping sharply towards the north-west, as if hastening down to the now far more famous Torbanehill Mineral, on the true character of which Fleming was but recently called to give testimony in a court of law—testimony which, from its precision, clearness, and scientific accuracy was held to have given direction to that noted case.² The trap action in the immediate neighbourhood of Fleming's birth-place, and all along the hills amidst which he rambled in early life, is most curious and interesting; and, we think, we can trace the influence of its peculiar character in some of his most interesting separate geological papers. At one place, you see that it has done no more than given the appearance of the gentlest undulation to the surface, while at another it has lifted the strata through which it has been protruded into a position nearly vertical. At yet another place, you find the strata so contorted

¹ As the Ring-ousel (*Turdus Torquatus*), the Shrike (*Lanius Excubitor*), the Siskin (*Carduelis Spinus*), the Goutucker (*Caprimulgus Europæus*), the Grass-hopper-chirper (*Sibilatrix Locustella*), etc.

² One of the eminent men called by the defenders told us recently that the geological witnesses for the defence, agreed that Fleming should be called first. A short extract from his evidence may be interesting. Examined by Mr Neaves:—

"Are there appearances similar to what you are accustomed to find in the floor and roof of other coals?—Perfectly identical.

"Is it supposed that the bed of coal, in such circumstances, is composed of sigillaria, of which the rootlets are to be seen below?—It may be supposed so, but I stated, I did not find sigillarias in the bed; but I found all the three I named, viz.:—*stigmariæ* distinct, numerous *lepidodendrons*, and numerous *calamites*, generally, however, stratified, or in a particular plane.

"And all these appearances correspond with what you have seen in other coal beds?—Quite so.

"In all respects?—In all respects.

"Mineralogically you have examined this substance?—I have.

"Does it appear to you to agree or differ from other substances that are called coal?—I should say in no essential points does it differ from ordinary cannel coal, and as such I would denominate it.

"Mineralogically?—Mineralogically and without hesitation.

"Its structure does agree with cannel coal?—It does.

"In combustibility it agrees with cannel coal?—It does so.

"Have you examined its fracture?—I have.

"Does its fracture agree with that of cannel coal?—Quite so.

"What is its fracture?—It has a tendency, in certain portions of the bed, to a slaty fracture, presenting a tolerably even surface. Generally, it has that fracture when it is broken in a direction parallel to the plane of stratification. When broken across, it frequently presents a very irregular, hackly, jagged, surface; and in other cases, it produces the conchoidal fracture, or the rounded shell-like form."

that, almost instinctively, you seek to account for the harsh twistings by imagining giant hands labouring to bend them in directions opposite to that into which giant shoulders have been seeking to heave them. The palæontology of the fossiliferous beds, in relation to which the trap is found sometimes as *flow* overlying them, and sometimes as *upheaval* shooting up through them, are peculiarly rich. And that all this had a powerful influence on young Fleming, there can be no doubt. The frequent references, in his "History of British Animals," to the locality supply the proof.¹ It is not our intention to dwell on his student life.² Having become a licentiate of the Established Church, he was soon after settled as parish minister of Bressay, Shetland. In 1810 he was translated to Flisk, in Fifeshire. It was here that his intimacy with Chalmers began, which continued uninterrupted while they were spared together. Under date Sept. 8, 1810, Chalmers writes in his journal:—"Walked to Monzie. At dinner we had Mr Fleming, presentee to Flisk; accomplished in some interesting branches of science, and promises to be a great acquisition to me, from the congeniality of some of our pursuits." Again, Sept. 11:—"Had a long walk with Mr Fleming, and am happy to find that he expresses a high sense of duty on the subject of the clerical office.

His largest and most important works were published while he was minister of Flisk. In 1832 he became minister of a more populous parish, Clackmannan, and, after a few years of faithful and evangelical ministerial work there, he was appointed

¹ The local coal deposits and beds of carboniferous limestone became the great books in which he early began to read that story of their formation, and of their characteristic fossils, of which in after years he made such good use. For example, "In the "History of British Animals," when he comes to describe extinct species—under the *Order*, Mollusca cephalæ; *Sub-Section*, Cephalopoda; *Genus*, Orthocera—we find that four of the nine specimens which have the surface of the shell soft, had been originally described by himself in connection with his own labours in the carboniferous limestone; one of the three given as having the surface striated transversely; the whole of those whose surface is characterised by transverse ridges, and one of the two distinguished by the surface with longitudinal planes or furrows. This will show to what purpose he had worked among the characteristic strata of his native district.

² His devotion to natural science so influenced several who had been his school-follows, and who continued his acquaintance for many years, that though working-men, they learned Latin when grown up, in order that they might be able to study botany as a science.

His visits to Bathgate were frequent for some time after he became a minister. On one of these occasions his brother William, who had vexed his relatives by his irregular habits, brought a young man to introduce to John. "This," said William, "is Mr S., my most intimate friend." "The very worst thing you could say of him," was John's immediate answer!

On the first occasion that he preached in Bathgate, his old cronies assembled to criticise. They took possession of a whole pew in front of the pulpit, but, must have been somewhat perplexed when they heard the text, Acts xvii. 10, "What will this babbler say?"

to the Professorship of Natural Philosophy in King's College, Aberdeen. Having identified himself with the Free Church, he left the Establishment in 1843, and, in 1845, was asked to take the Chair of Natural Science in the New (Free Church) College, Edinburgh. In this bald outline of his life, we have not yet indicated what seems to us its leading feature. This was the determination to show, that not only is there no inherent tendency in the earnest study of science, to seduce the soul from simple confidence in God as a covenant God, but that in it man may, while in lively fellowship with the mind of Christ, come to stand as a leader even among those whose *only* work is the study of science without reference to its religious aspects and its theological bearings. He found two tendencies actively at work when he rose into a position of influence. On the one hand, there were many who, while professing belief in a personal God, dealt by His Works as if creation could be divorced from the thought of the Creator; and, on the other hand, he saw a large class growing up, ahead of their fellows in point of intelligence, who were soon to seek to avail themselves of the discoveries of science, in order to wound, directly or indirectly, men's confidence in the infallible teaching of the Bible. His resolution was to outstrip the former in the knowledge of their peculiar studies, and to make use of his attainments to confound the latter, or, at least, to ward off those blows which they were beginning to deal at the fair, bright form of Revealed Truth. And he succeeded. He deserves this praise. The right minded Christian apologist will not give him less; and when the great multiform warfare between infidel and christianized science shall assume, as we believe it shall, forms of subtilty of which we have not dreamt, it will be even more readily accorded to him than it is now. It is a long time since we first read the preface to "*The History of British Animals*," but we will not soon forget the effect made on us by the then startling, but bold and manly utterance which is therein given on the theological relations of Natural Science. He says—

"The most sincere friend of Revelation need be under no alarm, even should he be anxious to establish the authority of his Bible over a wider field than the Moral History of our race. If the sacred historian be considered as referring to the earlier eras in the commencement of his narrative only, 'In the beginning, God created the heaven and the earth,' and to have contemplated, in what follows, the creation of the animals and vegetables of the modern epoch, it will be found that the deductions of science and the records of Inspiration, harmonise,—as the Word and the Works of God must do, if rightly interpreted."

Words which, as we know, were, at a time when Chalmers'

views were not known among Naturalists, as an anchor to many on dark and troubled waters. They brought before many an entirely new thought, which became the means of preserving them in the faith of their fathers until their fathers' faith became their own. If we find apparent antagonism between the Word and the World, nothing can be said against the World, for it is God's handiwork; and nothing against the Word, for that is as truly His and from Him. The seeming contradiction is the result either of man's ignorance, of the imperfection of man's faculties, of the partial development of science—or of all of them together. Now, with some knowledge of the ground occupied at present by Geology, Chemistry, and Physiology, we feel confident that the position thus laid down by Fleming still continues impregnable. In 1857 he had not found anything which could lead him to modify the utterance of 1828. We believe, too, that the apologetical efforts of christianized science will continue to be influential only as made from this sure standing ground. We need not dwell on the philosophical character of this attitude, for (1) It accepts the Baconian Aphorism, that "man, as the minister and interpreter of nature, does and understands as much as his observations on the order of nature, either with regard to things or to the mind, permit him, and neither knows nor is capable of more;" (2) As a consequence, it acknowledges that, because of the imperfection of man's faculties, there will always be a field in nature not thoroughly surveyed—that is, imperfection in the sciences themselves as to the knowledge of nature: and (3) It is characterized by child-like faith in God, and implicit confidence in the Scriptures as the very Word of God. We put this feature last, though in point of order, importance, and influence, it really stands first. Thus the humility of the true Christian philosopher.

When Fleming attained to the New College Professorship, in which, like Ray at Black Notley, "he was to spend the pittance of life which was left to him," he found himself in a position peculiarly favourable to the work in which he took pleasure. In instituting the Chair of Natural Science, the church to which he belonged testified that she has no dread of the discoveries of advanced science, but rather that she welcomes them. In having such a man as Dr Fleming to occupy it, her first Professor was one of the greatest Naturalists of the age, a man to whom the highest scientific mind of Europe paid homage. This Chair was then, in its very realization, to testify to the brotherhood between the revelation of God in the Bible, and the evidences of his power, and presence, and wisdom, and goodness in the outward world. Dr Fleming had thus a twofold purpose to work out in the position assigned to him. On the one hand,

he was to deal with the different branches of science taught there in a way not less able, systematic, and, in the highest sense, academic, than they were, or ever had been, taught from Chairs whose only object is held to be instruction in science without any reference to revealed religion. And, on the other hand, he was to deal with the theological relations of the Physical Sciences, and with prevailing current attempts to set the findings of science in antagonism to the historical and dogmatic teaching of the Bible, from the point of view of the thoroughly accomplished theologian. In a word, he was once more to realize in Edinburgh such a scene as that which attractively stands out before us when we look back to the foundation of the Edinburgh University, and see Rollock in the work at which we have already glanced.¹

Perhaps in Dr Fleming's ability to deal with many branches of science, not in the way of sciolism, but as one whose great attainments fitted him for speaking with authority, we may discover a leading feature of his character. We do not claim that he shall be considered a great discoverer, but we do claim for him the rare merit of having very greatly helped the progress of science, by being among the foremost who pointed out a method of classification more simple, yet more philosophical, than had before been generally recognised. His name will always be associated with this. Having taken a survey of the condition of natural science at the beginning of the present century, he saw, as he believed, that not only were many led away by crude theories and by specious but unwarranted generalizations, but also that a great hinderance to the progress of science lay in the Linnæan system of classification. He set himself to remedy this. It was a bold step. In common with Dr Fleming, many contemporary students of science were feeling the bondage of the

¹ Subordinate to this twofold work, but very far from unimportant, we would notice a provision for what may be called Biblical Science. This takes note of natural objects and phenomena mentioned in Scripture, and used by the Spirit of God in communicating His thoughts to men. The importance of this must at once be apparent. How often the understanding of some natural image used by the Bible writers, flashes light in upon expressions not otherwise clearly seen. Other advantages of this will readily occur to us. The imagery used by Scripture writers was drawn either from what they had heard from others, and what was currently thus known, or from the Works of God around them. We could point out many passages in which the former sort is broadly marked. In the latter, we are made to see how carefully and how closely, and even how minutely the prophets had observed the works of God. Take one out of many passages which occur to us, in which a natural image is used to give prominence to great fear—Micah vii. 17, "They shall move out of their holes like worms of the earth." The thought generally suggested by fear would be moving *into* their holes, but the Naturalist at once sees the force of the expression, when he remembers the effect of the least noles, like the scratching of the mole, on the worms, as if in dread they move out of their holes.

Linnaean method, and were casting about for one of greater liberty, and one more in harmony with advancing science. The bold few kept at their work amidst many changes of presumptuous innovation. They did not, however, desire to depreciate the old system. On the contrary, they held that the illustrious Swede would have been quick to acknowledge, in the light of many new discoveries, the defects of a system which his disciples clung to as perfect. The system which Fleming proposed to British Naturalists is that well known as the Binary or Dichotomous system—the leading feature of which consists in arranging animals according to their positive and negative characters. This he put to the severest of all tests, by applying it in his work on British animals. In the application of it, he took advantage both of the artificial and of the natural systems which were in vogue among their respective adherents; and thus he claimed for it the name of a mixed system. We give his own explanation of it (*Phil. of Zool.* II., p. 142):—

“If we take a hundred species of animals, it will be practicable to discover characters which are common to nearly fifty of these, but which are either absent or are incorporated with other characters in the remainder. We thus obtain two classes of fifty each, the one distinguished by a *positive*, the other by a *negative*, mark.”

The prominence given to the “negative mark” specially distinguishes this system from that of Cuvier, who passes it altogether. Thus, at the commencement of his labours, when indicating the means of a true classification, he said, “*Ces moyens sont les particularités ou les assemblages de particularités exclusivement propres à chacun.*”¹ But, perhaps, the best way to exhibit the primary divisions of the Dichotomous plan will be to contrast them with those of the great Swede and of Cuvier.

*Linnaeus.*²

I. Heart with two auricles and two ventricles; blood warm, red—
Mammals, Birds.

II. Heart with one auricle and one ventricle; blood cold, red—
Amphibious Animals, Fishes.

III. Heart with one auricle and no ventricle; sanies cold, white—
Insects, Worms.

*Cuvier.*³

I. Vertebrated Animals—Mammals, Birds, Reptiles, Fishes.

II. Soft or Molluscous Animals—Mollusca, (six classes, Cephalopoda, Pteropoda, etc.)

III. Articulated Animals—Insects, Worms.

¹ *Tableaux Élémentaire De L'Histoire Naturelle Des Animaux*, 1798.
Systema Naturæ.

² *Règne Animal.*

IV. Radiated Animals—Zoophytes, (five groups, Echinoderma, Intestina, etc.)

Fleming.¹

I. Vertebral Animals—Mammals, Birds, Reptiles, Fishes.

II. Invertebral Animals—Molluscous Animals, Radiated Animals.²

To the eye the simplicity of Fleming's system is at once apparent; but it has been alleged against it, and the author himself makes the admission, that in the application of it, difficulty will be found in regard to the sub-divisions. Swainson, in advocating the circular system proposed by M'Leay, questions its usefulness altogether, if we rightly remember, and gives some illustrations of its weakness, which tell decidedly against it; but, while we acknowledge its defects, the praise of the author must be great when we remember the time at which he proposed it, and the highly artificial system then in vogue. This whole question of classification is a very difficult one, and much yet remains to be done in it. We are persuaded, however, that if ever the time shall come when any one system embracing all animal life shall be received, it will be found based on those structural and functional³ characteristics to which Fleming attributed so much importance.

Looking generally at his first great work, which, so soon after its appearance, raised him to the first place among Scottish Naturalists, and made his name well-known in England and on the Continent, several of its features strike us as not only in advance of his day, but as abreast of the philosophy of Zoology at the present time; and our regret is that it never occurred to Dr Fleming to bring out that work in a cheaper and more popular form. Views of Instinct are brought out and graphically illustrated in connection with his discussions on "The Vital Principle," which, for their correctness and broad common sense, are peculiarly valuable now, when Materialism is seeking to fill its quiver with arrows found in this department of philosophical research. It is impossible to follow the statements made on this point in our higher literature, without feeling that never before

¹ History of British Animals.

² The system of classification at present in use is that of Cuvier, modified by Professor Owen, who has put the primary division, *Articulata*, in the place assigned by Cuvier to that of *Mollusca*.

³ I.e., *Anatomical* and *Physiological* characteristics. It is curious to notice how much carelessness obtains in the use of these terms, especially in works of a semi-theological character. But it should be remembered, that the province of anatomy is limited to questions touching the *structure* of the organised body, whereas physiology is limited to the consideration of its functions, and to "the explanation of the actions which it is capable of producing." Again, *Ontology* deals with the deeper question of *cause*, or of *vital force*.

have the alleged affinities between the rational soul and the instincts of the higher orders of the irrational creatures been brought so awfully near to each other as they often seem to be at present. These speculations likewise gain point from the prevailing ignorance of the comparatively recent branch of knowledge—hoinology, or the anatomical relations between man and the lower animals. In Fleming's remarks on Instinct, and, especially in the views he held of the great importance of the study of comparative anatomy, we see the point of view from which these are to be regarded, and the ground on which errors linked up with them are to be met.

It is also a striking testimony to the ability of Dr Fleming, that notwithstanding the attention which has been devoted to Psychology since he laid down its great landmarks with a precision which helped forward the progress of the Science of Mind, his views have not been superseded. And more; many have been in the habit of tracing the first recognition, in the systematic study of Moral Philosophy, of the fallen character of man, and the provision in grace made for the remedy of this, to the labours of Chalmers, and perhaps more fully to the author of the admirable work on "Christian Ethics;" but it should not be overlooked, that both are taken clearly into account in the section of the Philosophy of Zoology devoted to the "Faculties of the Mind." Thus, vol. i., p. 239, having put the question, "What is duty?" he reviews the variable standards of duty existing in different heathen nations, and adds,—

"We could easily swell the proofs of the variableness of the human standard of duty,—and although all are convinced that there is, or ought to be, a standard, they differ with respect to its character. This display of a moral deficiency or want in our nature, is the strongest proof that can be urged for the necessity of a revelation. The Christian religion supplies this moral want,—and furnishes a standard which, if observed, would make all men in every condition happy, exalted, and wise."

The greater part of vol. ii. of his first work is devoted to the exposition and illustration of the new principle of classification. We might enlarge on this; but, while recommending it to the study of our readers, we shall only remark that the first class under the general subdivision *Gangliata*, forms, with slight alteration, the article "*Mollusca*" in the seventh edition of the "Encyclopædia Britannica." This was afterwards published separately, and is now regarded as a standard work.

Six years after the publication of "The Philosophy of Zoology," he sent to the press his well known "History of British Animals." In this a decided and thoroughly scientific attempt was made, we believe, for the first time in Britain, to exhibit the palæonto-

logical history of animals along side of the history of those belonging to our epoch. Geology was made by him to join hands with his favourite Zoology. The strata, which hold the remains of the forms of life characteristic of the past giant ages, were made helpful to the study of forms of life at present existing; and these latter, again, were made to throw a bright light back upon the former. The rocks were seen to have a testimony. How was that to be read, and was there any one great principle which might safely be alleged to suggest an explanation of those mighty revolutions which the geologist saw had taken place in the animal kingdom? The questions were momentous, and they continue questions of deepest moment still. And now Fleming walks forth again in strength. He had a message to tell to *his* age, touching the great ages which had passed "before man appeared on the platform of creation; and the earth, as it now is, began to hasten to that more glorious condition when, in connection with the full realization of the work of its Creator-Redeemer, it shall lay aside the defiled garments of sin, and the unlovely garb of the great curse, and shall stand forth in immortal youth—"New."

It is in the philosophical preface to the "History of British Animals" that we first meet distinctly with the evidence of the great geological attainments of Dr Fleming,—attainments not gathered up from books, but formed in the wide attractive field of observation, by one who rejoiced in calling himself an "out-door naturalist." He divides the crust of the earth into six great epochs. These are—I. The Modern Epoch; II. The Penult Epoch; III. The Cretaceous Epoch; IV. The Saliferous Epoch; V. The Carboniferous Epoch; and VI. The Primitive Epoch. A glance at these will convince any one, but especially any one acquainted with the group of strata included under each, how much recent classification is indebted to this mode. The change of names, no doubt, helps to hide this; but the debt, and it is a large one, continues notwithstanding. Looking not only at the gradual formation of the various strata, but also at their palæontological character, Dr Fleming says,—"*The revolutions which have taken place in the animal kingdom, have been produced by the changes which accompanied the successive depositions of the strata.*" This meets much more than we have space to exhibit. It acknowledges the revolutions in the animal kingdom, and suggests an explanation; and it anticipates a whole host of the crude statements which now prevail on this point. The earth has a history—it hath had one since God founded it on the floods; and this history hath been growing in greatness as world was piled on world, and as "the giant ages heaved the hill, and brake the shore." The history of the earth's crust is written on

the earth itself: nowhere else. Man is the interpreter of that history; but the interpreter is not infallible! Fleming broadly states that his interpretations will be trustworthy only when they are based on, and guided by, observation of what the rocks tell of themselves. Their history is not written in the Bible, because the Bible deals with the earth as given to man. It is no part of its mission to unfold to us a particular account of what the world was in the great ages before man is seen amidst its manifold beauty. This consideration should lead us to regard with suspicion every theory which would make the Bible responsible for a detailed account of creation, unconnected with the history of man. The position laid down by Fleming suggests all this and much more. We must not then look to the Bible for the detailed history of the earth's crust. That history is written on the rocks; and it is for science humbly, and in self-distrust, to attempt to read it. But if the attempt be made in the belief that the task is an easy one, beyond all doubt the interpretation will be false. The task is not easy. Imagine the difficulty of deciphering the legends on a slab, on which the picture-writing of Egypt should be found crossed with cuneiform characters, and these again, in opposite directions, with Arabic, with Hebrew, with Greek, and with Roman letters, while only one alphabet was fully known, and the story contained in it had references to all the other writing! If it were a question of comparative age that was to be settled, we can see how the historic critic might again and again find himself at fault, as he discovered that which he had before concluded was most ancient, meeting him as if it had been realised after what he knows to be the latest. Now, though we have got the key to the relative age of the different strata, we have not got, and we never will get, the key to the time in the history of the earth's crust over which those periods of disturbance extended, which have given to the surface its present conformation. If time after time the disturbing action was general—and there are good reasons for believing this, there would be ruin—wide-spread desolation—prevailing chaos, and consequently “great gaps” in the march of organic being; but there would be no break in the purpose of Divine manifestation, *because the gaps themselves would be parts of the Divine plan*. Ignorance of this is now leading some—in order to preserve their imagination of an unbroken chain of organic being, from the lowest fossiliferous strata up to our own epoch—to explain away the words, “The earth was without form and void,” by a process which would soon take from us the whole Bible. “The dogma of Linne, ‘*Natura opifex rerum, saltus non facit*,’” says Fleming, “is like the ‘chain of being,’ of Bonnet, ‘little else than a poet’s dream.’” We have often thought that, in dealing with the “chaos question,” the statements of the

Spirit of God, as to the close of the present order of things, are very suggestive. When we are introduced to it in Genesis, the words broadly indicate desolation; and, when the last grains in *our* time's glass shall have run, darkness and desolation are to be again the threshold to new light and life—(2 Peter iii.) Present creation is thus seen associated, in its beginning and its ending, with chaos, like the two ends of the rainbow resting on, or lost in, dark clouds.¹

Though he was spared to see many attempts made to invalidate this position, and to get quit of the theory indicated in it, he never resiled from it. These changes he held to be characterised by great disturbance in many cases, and by an altogether unusual state of things in all. His opinions on this question were readily accepted by the highest minds of the country. We are well acquainted with Chalmers' views of them. Hugh Miller's were not less distinct. "At this period of our history,"—the period represented by the Cromarty ichthyolite beds of the Lower Old Red Sandstone,—he says, "some terrible catastrophe involved in sudden destruction the fish of an area at least a hundred miles from boundary to boundary, perhaps much more. The same platform in Orkney as at Cromarty is strewn thick with remains, which exhibit unequivocally the marks of violent death. The figures are contorted, contracted, curved; the tail, in many instances, is bent round to the head; the spines stick out; the fins are spread to the full, as in fish that die in convulsions." In this case, the illustration is no doubt partial, but there is the recognition of the principle stated by Fleming—a recognition which alone could have led him philosophically, in his "First Impressions of England," to the full acknowledgment of the chaos demanded by the old scheme of reconciliation. Nor

¹ Since writing this, we had occasion to look back on some of the early numbers of this journal, and we met with the following, by Sir D. Brewster, in the article on Cuvier: "He has proved, by an accurate comparison of the bones of one period with those of another, that the animals of any given period were not descended, by natural birth, from those of the preceding period, but were new creatures, fresh from the hand of their Maker. Hence he deduced the extraordinary result, that the creatures of each successive period had been destroyed by some sudden catastrophe; and that the earth, thus swept of its animal life, was again repopled by new races of beings, rising in the scale of creation, and terminating in intellectual and immortal man. . . . But the confirmation of the Mosaic account of creation is not the only, or even the chief, result of geological discovery. The commencement of organic life in plants and animals of the first period, and its higher and progressive development in different orders of beings, leads us back to that beginning which was so long veiled from human reason; while the successive destruction of successive creations carries us forward to the terminus of our own period—to that 'day of the Lord, when the heavens shall pass away with a great noise, and the elements shall melt with fervent heat, and the earth also, and the works which are therein, shall be burned up.'"—*North British Review*, vol. i., p. 28, 1844.

will any answer to this be satisfactory, which sets out with the question—"But you do not say it is logical to affirm that what is true of the part must be true of the whole?" because in this matter we have sure indications that all the leading forms of life of certain epochs have been destroyed before those characteristic of a succeeding one have been ushered on the scene of being. Besides, the hypothesis—what is true of a part *may* have been true of the whole—is not without its apologetical value. But, say some fireside geologists, "We grant that former epochs have been introduced in conditions of chaos and darkness, but we do not acknowledge that our own has; for have not these rocks been as they now are for millions of years, as attested by their water-worn sides? and these deltas, have they too not been forming for millions of years without any disturbance? and these cones of old volcanoes—pretty in their sharp edgings and delicate outlines—could ever water have swept over them without levelling them to the valley?" These questions admit of an elaborate answer in the statement of hypotheses, which, though they remove not the difficulty, yet neutralise the objections built on it; but this would be foreign to our article. We refer to them, however, in order to state, that though Chalmers, and Miller, and Fleming, had all these phenomena under their notice, they did not find anything in *them* to lead even to a modification of the Chalmerian scheme of reconciliation. Mr Miller, as we have seen, did change; but it is demonstrable that it was not because he felt himself unequal to deal with these so-called difficulties. Now that we are deprived of Dr Fleming's presence, and of the influence of the living voice, to protest against the wild, and, we shall add, unscientific theories, into which many are blindly drifting, in connection with bewildering schemes for harmonising Geology and Genesis, we feel thankful that he, being dead, yet speaketh; and that his words are such as that, while exact science accepts them as containing a theory which solves many difficulties, the Christian likewise can accept this theory, and rest in it, as he waits for that brighter and fuller light, which he will be among the foremost to welcome—when it comes.

And we should be all the more thankful for what Fleming has accomplished in this department, when, as now, many who could not tell one series of strata from another in the field of practical Geology, and who are as ignorant as one we heard of lately, who, when a young friend showed him a beautiful *belemnite*, said, "Yes, I see a—*a* thunderbolt," have attained to a rudimentary knowledge of the terminology of this difficult science, and, because of this, think themselves entitled to attempt to pledge the Christian understanding to views of the history of God's dealing with creation, which, while they are not favoured by science, do

violence to the written Word of God, Plainly the Church's duty and safety is to stand aloof. *She has a scheme which has not yet been shaken*; and she is not called upon yet to look out for another. Yea, were that scheme shaken, and were the "Age Theory,"—"The Rapid Refrigeration Theory,"—"The Dynamical Theory,"—Dr Ure's "Antediluvian Theory,"—the Dean of York's "Diluvian Theory,"—or Mr Gosse's "Prochronic Theory," to be the only one which she could bravely look in the face, we have a deep persuasion and an earnest conviction, that she would not be called to identify herself with it. She can point to the lessons in the past, and, while acknowledging the imperfect state of this science, demand that her children shall not attempt to pledge her to any scheme, on the ground that the proof is positive, which, at present, it is very far from indeed. And how commanding this attitude. While looking forth from amidst the blessed sunshine of her Lord's countenance, she will acknowledge the riches of creation to be His, and will bid all her accomplished children, "God speed," in seeking to know increasingly the ways of Him by whom the worlds were made. Superstition may frown at true science, but true Christianity frowns only on that which is false. Christianity seeks to lay the fruits of knowledge, not less than the sacrifices of love, on the altar of her King and Head.

It says not a little for the sagacity which tabulated the great divisions of the strata, in the preface to the "British Animals," that the author, though fully alive to the vast additions recently made to our knowledge of the crust of the earth, did not feel himself called upon to alter his table, but found it fitted for receiving the latest discoveries of geology. Before his death, we found it an interesting work to compare the outline of geological lectures in his "Institutes"—drawn up after 1845—with the subdivisions in the tabulated epochs. The results of the comparison were peculiarly gratifying, as showing how thoroughly, in his old age, he kept pace with science in her onward march, and also, how ready he was to welcome the discoveries being made in those wide fields which he had so wisely mapped out in his early days. Accordingly, Lyell's labours in the Tertiary, and Murchison's in the Silurian, are welcomed and admitted to the place of great prominence which he at once conceded to them. Much greater prominence is likewise given to Palæontology in "The Institutes," than was assigned to it in the "History of British Animals," and the theological difficulties are more fully marked. It must ever be a cause of regret that his advanced knowledge was not brought out in connection with an edition of the "British Animals," which would have contained the results of recent observation and discovery; because, in the

full knowledge of many new Hand-Books in Natural History, he would not willingly give the preference to any over this work, except, indeed, in the matter of information on recent discoveries. While, as a true man of science, he keeps to his peculiar work, and does it well, there is a delightful freshness of remark, of anecdote, and quiet antiquarian gossip, accompanying his descriptions, which must have a charm for all. We should have liked to quote some illustrative passages, but must ask the reader to look at the third remark under *Felis Catus*—Brit. An., p. 15; at the second, under *Bos Taurus*, p. 24; at the passage from *Torfaeus*, p. 27; and at the remark under *Delphinus Phocæna*, p. 34; as indicating into what regions of literature he travelled in search of information on his favourite pursuits.

"The Institutes" bear striking testimony to the variety and breadth of his attainments; and he has left ample proof that these were not only varied but accurate, and not only broad but deep likewise. Chemistry, Mineralogy, Botany, Zoology, and the several departments of Geology, were familiar to him as household words. And if to these we add his intimate knowledge of Comparative Anatomy, we will see how thoroughly furnished he was for his work. The questions having direct or indirect theological bearings, which he discussed from the Chair of Natural Science, were such as Hume's Views of Causation, the Argument in the Evidences from the Unity of Design, the Development Hypothesis, the Theory of Centres of Creation, the Deluge, the Age of the Earth, the Existence of Death before the Introduction of Sin, and other topics of this nature. Only on the last of these mentioned have we heard any difference of opinion as to the thoroughness of the mode in which he dealt with such difficult questions. The sentence quoted from Linnaeus, in the Introduction to "The Institutes," seems to have been before him throughout his course—"The Author of Eternal Salvation is also the Lord of Nature."

Most of the miscellaneous papers contributed to leading scientific journals by Dr Fleming, are quoted at the head of this article. We shall not attempt an analysis of these. Several of them are controversial. But controversy is part of the discipline of truth. There seems almost a necessity that it should be entered on, by every man who sets out in public life resolved to think for himself, and to defend whatever appears to him to be truth. The work is often painful enough; but if a man has, before God, resolved to climb to any place in life's ladder, in which he is persuaded he may do more in the cause of truth, he must lay his account for it. While the noble and the generous-minded, who stand higher than he, will welcome his approach, many will grudge it; and the crowd out of which he seeks to rise, while

too indolent to strive to rise with him, will not fail to throw every possible obstacle in his way. We might illustrate this from some of Dr Fleming's earliest contributions to science, but the subject needeth not illustration.

In 1851 Dr Fleming published a little work on the "Temperature of the Seasons." It is avowedly a popular treatise, written in a popular style, and well fitted to the end for which it was written, namely, to diffuse among the people information as to the influence of temperature on inorganic objects, and on plants and animals. He tells us, in the preface, that "it has been the object of the author, to excite in the minds of the young especially, the habit of attending to every day occurrences, and the desire of connecting these with the causes which produce them." It will be found profitable for the young, both because of the peculiarly interesting way in which the subject is illustrated, and also because it will bring them in contact with one of the most accomplished men of science, labouring for their good, and seeking to instruct them,—

by the love impelled
That moves the sun in heaven and all the stars."

This review, necessarily hasty and imperfect, when we take into account the character of the works glanced at, will, if it do no more, at least suggest the depths and the variety of Dr Fleming's attainments. If he was familiar with several branches of science, as zoology, mineralogy, botany, and geology, the familiarity extended far beyond the outlines of these. He knew them well, yea, profoundly; and if there were few questions, in *any* department of physical science, on which he was not competent to give a trustworthy opinion, it was because he had studied them diligently. We do not think that there ever was a time when the adage, "beware of the man of one book," did not contain a fallacy. Just as it is impossible to know any one book well without the knowledge of other books, so it is impossible to know thoroughly and correctly any one branch of science without a more than superficial acquaintance with several other branches. As, in the interaction of any one mind with another, forms of thought are evolved which are fitted to influence a third party more than either of the two; so there is an interaction among the sciences, which not only shows us one science throwing light on another, but which must be clearly discerned by the student of any one science, before he shall be able to make his favourite one fruitful of good to his fellow-men.

But, while we acknowledge the breadth, and depth, and variety of Dr Fleming's attainments, our estimate of his works would not be complete, even in the outline, did we not acknowledge

that, for two reasons, they are not all that we could have wished. On the one hand, it is, we repeat, greatly to be regretted that he did not keep his "History of British Animals" abreast of advancing science. Great additions have been made to every department included in that able, and, for the day at which it was drawn up, remarkable work. A much more correct arrangement of species, especially in Molluscan palæontology, has been realized, than what obtained in his earlier days. Take one or two examples. In the Family Orthoceratidæ, Dr Fleming specifies nineteen under *Orthocera*, whereas we have now more than 120 typical species. Under *Belemnita*, family Belemnitidæ, he gives four species, but more than 100 are now named. In the family Buccinidæ, he gives under *Buccinum* ten species. There are, however, not fewer than 130 now known. In the cases now given, the progress of geological science during the last twenty years has shown also that the different families are spread over a far wider range than Fleming assigned to them. This line of observation might be applied to other divisions of his work. In making these remarks, however, we have proof that he knew and kept pace with this progress; but what we are indicating is, that he has not left us the literary proof of this. Neither have we any evidence that he had given attention to several departments of science, which have recently come to have much prominence given to them, and in which, as might be fully shown, infidelity is seeking weapons of warfare. We refer to the great attention which is being given to embryology, and to such discoveries in modes of generation as those with which the names of Steenstrup, Owen, Siebold, and Van Beneden, are associated. Agassiz is labouring earnestly in the former field, from his well known point of view, and we may count on his new work giving rise to many speculations among those who, while ignorant of science, are ever eager to appropriate its discoveries, in order to obtain weight for theories antagonistic to revealed truth, theories for the advancement of which they labour and live.

After we had finished the preceding part of this article, it was our privilege to obtain the proof sheets of the work on "The Lithology of Edinburgh," with the press preparation of which Dr Fleming was busy when he was removed from the midst of us. This work will, we trust, obtain many readers. We can promise that they will find in it both farther illustration of the views already indicated by us, and also evidence of the continuance with him, after he had passed the threescore years and ten, of that strong intellect and broad common sense which distinguished his scientific observations and analysis while he was yet in his vigorous prime. That *brusquerie*, too, is there, which distinguished his earlier labours in the literature of science; and his

intercourse with his fellows, especially in associations of men of science,—a bluntness which, in its two sides, reminds us of the line,—

Βαρύταν ἐχθροῦς, καὶ φίλοιςιν εὐμενῇ.

One aspect of "the Lithology" has given us unmingled satisfaction. We have ventured to dissent, for reasons which, in the present state of science, we hold to be unanswerable, from Mr Miller's latest physico-theological views, and we rejoice to find now that the dissent is taken on precisely similar grounds by Dr Fleming himself. It is pleasant to sail with Fleming amidst the swelling waves of present speculation on many questions of a kind the most difficult that can exercise our minds; and, in the very imperfect state of geological science, of a kind the most dangerous. He knows the charts of those broad waters so well,—he has so constantly before him the dark clouds which loom in the distance, and which, *as yet*, hide from us what kind of shore lies beyond them,—his reckonings have been made on data so thoroughly trustworthy—his compass is so true to its work,—the vessel answers so quickly to his will,—and the disturbing forces in wind and tide, in ground swell and ocean current, are taken so prudently into account, that one feels the sailing to be not only pleasant, but truly safe also. We should have liked to have made more use of "the Lithology," than our space will permit. There are two passages, however, to which we crave the attention of our readers, who will at once see their value. In reviewing Sir C. Lyell's divisions of the Tertiary, he remarks:—

"In the views connected with the preceding statement of Sir Charles Lyell, there are assumptions which may be considered objectionable in many respects. The first is, perhaps, the most startling, viz., That species have perished from off the earth by no sudden destruction, but by degrees, and that species have made their appearance to succeed them by no sudden creation, but imperceptibly. If this notion be based on truth, it will cause a great modification in the commonly received opinions respecting chaos, and the commencement of the present races of animals on the globe. It leaves untouched, however, the proof of creative power, by acknowledging the appearance, from time to time, of *new species* on the earth, and it admits the destruction of species which has frequently prevailed. At present, however, we are chiefly concerned with the question, Is the notion consistent with scientific truth?

"When we consider the quadrupeds, birds, reptiles, and fishes of the Paris and London basins, or of the eocene period of Lyell, we do not find that a single species had survived and been coeval with any of the existing races—so that there is no interval here—no dawn. The 96½ per cent. of shells, which constituted the testaceous fauna of

the tertiary period, all perished, and only $3\frac{1}{2}$ per cent. of their companions are supposed to have survived, so as to constitute the connecting links with the succeeding or modern group. But the identification of these species of the *dawn* has not been established, nay, by competent observers, is doubted and controverted. When a very broad generalization, therefore, like the present, rests not on those objects which are distinct and recognisable, as the remains of *vertebrated* animals, but on *shells* macerated, and perhaps rubbed, and thus of doubtful character, and about the identification of which grave doubts prevail, we feel ourselves justified in avoiding a nomenclature and arrangement resting on such slender pretensions, and regulated by an empirical per centage. Nor can the suspicion be avoided that the mixture of older with newer species, as those of the London clay, associated with those of the Crag, and produced by denudating and assorting agencies, may have been in haste misinterpreted, without even suspecting collectors of being ever either ignorant or guilty of deception.

"I have long considered, and must again repeat, that there has been too great a tendency to select one or two beds of this group, which are here considered as constituting the Modern Epoch, and endeavouring to explain their origin and mode of formation, leaving the other beds as residual phenomena, not sufficiently important to demand consideration, or rather, it may be suspected, left out of view because assuming somewhat of an obstructive character."

In the able outline of hypotheses on "raised beaches," this passage occurs :—

"The late Mr Hugh Miller, a keen advocate of the upheaval notion, fancied that at the mouth of the Foul Burn, on the beach east from Seafeld, he had found stones in the same position as they occupied when the oyster, limpets, and serpulæ which he found attached to them, had lived. This supposed fresh proof he communicated to a meeting of the Royal Physical Society, Dec. 27, 1854, 'On a raised sea-bottom near Fillyside Bank, between Leith and Portobello.' On examining the spot, however, it was no difficult matter to perceive that his affection for a favourite vision had led him to be contented with looking at those stones which countenanced his views, and to overlook others of a decidedly contrary character, such as limpets adhering to the under sides of stones imbedded in clay, where they never either lived or moved. After the locality was fairly examined, we heard no more of the matter."

It was our purpose, when we began this article, to conclude with a brief outline of recent discoveries, in some departments of science, in which Dr Fleming had not much worked, if he had worked at all, but which are peculiarly interesting and suggestive in connection with the literature of natural theology—a literature which now demands a position far in advance of the majority of the Bridgewater Treatises. But we have already

occupied more space than was allotted to us. It would have been beside our task to have dwelt on the outstanding features of Dr Fleming's character. Our work has been mainly with his contributions to natural science. The value of these will, we are persuaded, grow as those tendencies increase, which, in their beginnings, are already at work around us, and which were so graphically described by Dante, as characteristic of the philosophy of his era:—

“ Reckless some

Of error ; others well aware they err,
 Each the known trick of sage philosophy
 Deserts, and has a bye way of his own :
 So much the restless eagerness to shine,
 And love of singularity, prevail.
 When the book of God
 Is forced to yield to man's authority,
 Or from its straitness warp'd : no reckoning made
 What blood the sowing of it in the world
 Has cost.”—Par. c. xxix. 87.

ART. IV.—*A System of Logic, Ratiocinative and Inductive: being a Connected View of the Principles of Evidence and the Methods of Scientific Investigation.* By JOHN STUART MILL. 2 vols. Fourth Edition. (Book iii., of Induction).

WHEN Bacon, some two hundred years ago, gave to the world that new instrument of research which was to revolutionise the world of science, he did not pretend to regard his work as perfect, or as sufficient for the demands of science in the time to come. On the contrary, he looked forward with sanguine expectation to the improvements which time and progress would effect. As each step of a traveller not only brings him farther on his journey, but enables him to see to a greater distance in advance, while each eminence which he surmounts gives him new and farther-reaching views of the country through which his path must lie; so will it be, said Bacon, with the art of discovery, which will ever be growing with the discoveries themselves. At first sight, his anticipations may seem to have been fulfilled. Not only has the field of scientific discovery been immensely extended, but we have had, in recent times, several contributions to the philosophy of discovery. The latest and most popular of the writers on this subject is Mr Mill, who informs us that "Physical Science has outgrown the Baconian conception of induction," and that there is now need of a new method. Bacon would, we are persuaded, protest against being made in any degree responsible for the modern methods, and would declare that, so far from having outgrown his conception, they had never approached it. He would, doubtless, be surprised at the rapid advance of Physical Science in our day, but it would be because the advance was made by a path different from that which he pointed out. But waiving this question, which we cannot now discuss, what shall be said of the progress made towards a more exact and comprehensive theory of method? Let Mr Mill's work reply. That author, indeed, regards his treatise as the first attempt to exhibit a systematic view of the principles and rules of the inductive philosophy, and he claims to have achieved a task which, he affirms, was regarded as impossible by Lord Macaulay and by Archbishop Whately. His work, then, is put forward as indicating the new era. But in it we see that philosophy has abdicated that commanding position which Bacon assigned to her, and is content to follow at a modest distance the steps of practical science.¹

¹ In our remarks on a work so long before the public, and so widely circulated, we shall assume that the reader is sufficiently familiar with its main features to dispense with continued justifying references.

There are plainly two modes of arriving at a theory of induction. The one endeavours, by studying the nature of things and the mind of man, to ascertain the method which ought to be pursued in order to discover the laws of nature. In such a method, the consideration of history, and the results which have already been attained, would be a necessary element, as throwing a light both on the nature of things and on that of man in relation thereto. But, while the study of these practical results would serve to suggest new rules, or to give warning of hitherto unnoticed dangers, the theory would always keep ahead of practice, and would be ever pointing to new subjects of investigation. Just so it is, in some measure, in the special sciences—in Physiology, for instance, in Astronomy, and in Chemistry; and so Bacon expected that it would be with the art of discovery in general. The other method, rejecting every *a priori* element, abandons all intention of guiding practical discoverers, and contents itself with “generalising the modes of investigating truth and estimating evidence.” This is the method which Mr Mill, in the commencement of his work, announces his intention of adopting. He does not pretend to take his stand on any elevated peak, in order to take a survey of the yet unexplored fields of nature, and to map out the fitting course for future inquiries; it suffices him to trace the footsteps of those who have already made some progress in advance.

Before proceeding to discuss the method and rules of induction, as presented by Mr Mill, there are some preliminary questions which require to be settled, as—What do we mean by induction? and, Is induction possible, and how? To the first question, Mr Mill replies, that “induction is that operation of the mind by which we infer that what we know to be true in a particular case or cases, will be true in all cases which resemble the former in certain assignable respects. In other words, induction is the process by which we conclude that what is true of certain individuals of a class, is true of the whole class, or that what is true at certain times, will be true under similar circumstances at all times.” This is Mr Mill’s formal definition; but he also summarily defines induction to be “generalisation from experience. It consists in inferring from some individual instances in which a phenomenon is observed to occur, that it occurs in all instances of a certain class; namely, in all which *resemble* the former in what are regarded as the material circumstances.” Lastly, it is “the operation of discovering and proving general propositions.” The last is given merely as a provisional definition. We are, in general, slow to fix upon particular expressions of an author, and to tie him down to their logical consequences; but, surely, if verbal accuracy may be fairly insisted on in any work, it is in

a treatise on logic ; and if, in a logical treatise, any expressions are more especially required to be free from error or ambiguity, they are the definitions. Let us then briefly examine these various definitions.

First, then, they all obviously exclude *deduction*. It is true that this would, by most philosophers, be regarded as an essential condition of their correctness ; but it is to be remembered that, according to Mr Mill's view, "deduction is but a mode of induction ;" and, therefore, when professedly treating of induction—"in the most comprehensive sense of the term"—he was bound to give a definition which included it. But, secondly, they exclude also what he calls "the main business of induction," namely, the "ascertaining the effects of every cause, and the causes of all effects ;" for in these the only generalisation is one which is assumed as having been performed once for all. When we ascertain that A is the cause of B, our inference, is not that A invariably precedes B, but that A is the phenomenon which it is assumed always precedes B. Let us see how one of Mr Mill's own examples will support his definition. "When a man is shot through the heart, we know that it was the gunshot that killed him, because he was in the fulness of life a few minutes before ; all circumstances being the same except the wound." In this inference where is the generalisation, the passage from the known to the unknown ? Mr Mill would reply that it is implied in the word *cause*. But this generalisation does not stand as part of our inference : that inference is not—"This gunshot wound was followed by death ; therefore all similar wounds will be followed by death ;" but—"In this instance that particular antecedent, on the presence of which the event of death depended, was the gunshot wound." And a similar remark will apply to all cases of the discovery of causes and effects. The inference may be stated in a general form, but the generality is accidental. Thirdly, these definitions confound two distinct processes,—that of discovery, and that of proof. In the preliminary definition both are included ; in the others, and especially in the most formal, discovery appears to be excluded, for the essential part of discovery is not the inference from known instances to unknown, but the ascertainment of the essential circumstances. Lastly, we shall for the present pass over the circumstance that the formal definition applies in strictness solely to that generalisation which includes all others, the belief in the uniformity of the laws of nature.

The process usually termed induction may, for our present purpose, be regarded as consisting of the following steps :¹—First,

¹ Sir John Herschel's account of Induction is to the following effect :—We classify facts or objects under general well-considered heads, or points of agreement (for which purpose the simple phenomena resulting from analysis will

the analysis of a particular phenomenon. Secondly, if this, combined with our former knowledge, does not suffice to give the law or cause, other similar phenomena are collected and analysed. Thirdly, these are compared, the circumstances of agreement and difference are noted, and the antecedents which appear unessential to the effect investigated are eliminated by Bacon's rules of simultaneous absence, presence, and variation. Hence we obtain the law by stating the antecedents which are essential. Lastly, by the principle of uniformity of the laws of nature the proposition may be made general. The last step alone is included in Mr Mill's definition. He supposes that the class has been formed; in other words, that the process of eliminating all the unessential circumstances has been performed. The properties of the individuals are known, and the material circumstances ascertained; or, in other words, we know the subject and the predicate, and the whole process of induction consists in affirming the one of the other.¹ Such a process contains no method and needs no rules.

Mr Mill proceeds thus:—"In the statement of what induction is, there is implied the assumption, that the course of nature is uniform—that whatever is true in any one case, is true in all cases of a certain description; or, in other words, that every event depends upon some law." Now, if this principle is assumed in the very first induction to which men are led, it is manifest that it cannot itself be derived from induction. No proposition can be proved by an argument which assumes its truth. Manifest, however, as this maxim may appear to mere logicians, Mr Mill regards it as a vulgar prejudice. According to him, the principle in question is itself the result of induction; and not only so, but it is not arrived at until long after, and in consequence of, other inductions, in which its truth is equally implied.

Let us, however, look a little more closely into the logic of this question; for we must not forget that we are considering a treatise on Logic. Let us put the case, which must have at one time existed (as Mr M. allows), before this general principle was established, even by what our author is pleased to regard as proof. Certain individual facts, then, we suppose, have been ascertained, and a glimpse has been obtained of a general fact

(serve), and thus each of such phenomena, or heads of classification, becomes a general fact. These become the objects of a higher species of classification, and are included in laws. By continuing the process, we arrive at axioms of the highest attainable degree of generality. "This process is what we mean by Induction." It is carried on, he adds, in one of two ways—first, by comparison of ascertained classes, and investigation of their agreements and disagreements; or, secondly, by considering the individuals of a class, and casting about to find in what they agree, besides that which forms the basis of classification.

¹ It is to be observed, that in the formal definition the expression, "infer from particular instances," is avoided, and altered to "infer that what is true," etc.

or law; for the mind has, as Mr Mill states, a natural tendency to generalise. This, however, cannot satisfy a philosopher. Mr Mill protests against the appeal to any fancied subjective necessity; and much more would he doubtless protest against founding any argument as to the truth of things on a mere tendency so to believe. We have then nothing but our collection of facts; let it be that fire has in certain instances burnt, or that milk has been known to nourish. Doubtless the vulgar man will follow his "blind propensity," and act on the truth of the general proposition, if he does not express it in words. But the philosopher is wiser. He is acquainted with no principle which authorises him to pass from the known to the unknown, or to extend his conclusions to cases not included in the premises. Nay, he does not yet know whether the same proposition may not be true and false at the same time; for the impossibility of this is only known (says Mr Mill) from induction. If he happens to be convinced of this in a particular case, he has no reason to extend his belief to cases of which he knows nothing. He is chained within a narrow circle, beyond which he can by no effort of ingenuity pass. He is as a blind man, whose knowledge is limited to the objects which he can touch.¹ In this state, a logical philosopher will not fear to put his hand into the fire, for he *knows* nothing of what is likely to happen; if he eats, it will only be by way of experiment. The chain, however, by which he is bound, is a *logical* one; and accordingly Mr Mill finds no difficulty in breaking it. He says, "Whatever has been found true in innumerable instances, and never found to be false after due examination in any, we are safe in acting upon as universal provisionally." Whence did Mr Mill obtain this principle? Is it self-evident? Is it a datum of consciousness, an "instinctive" principle, or is it a result of induction? It would be interesting to know Mr Mill's answer to this question. In another place he tells us, that if we consult the actual course of nature, we find, "that whatever is true in any one case, is true in all cases of a certain description; the only difficulty is to find *what* description." How we can know by observation that all the supposed cases are of the same description, while ignorant *what* that description is, he does not tell us. Can there be a more striking proof than these two passages afford, that the inductive principle is one of those propositions "which men, even when they deny [or, as in the present case, suppose to be under scrutiny], are yet forced to act upon?"

¹ "Take away the light of this inductive principle, and experience is as blind as a mole. She may, indeed, feel what is present, and what immediately touches her; but she sees nothing that is either before or behind, upon the right hand or upon the left, future or past."—*Reid*, p. 200, *Hamilton's Edition*.

But Mr Mill has not even understood the principle which is in question, nor consequently the doctrine against which he protests. In the first place, he throughout confounds the principle of causality with the uniformity of the laws of nature. Reid thus states the former, "Whatever begins to exist, must have a cause that produced it." The latter has not necessarily any connection with the idea of cause; but, in its application to it, stands thus:—"Like effects are preceded by like causes."¹ Now, besides the essential difference in form between these two statements (which is as great as between "Every man has had a mother," and "Like men have like mothers"), the word, cause, is used in them in two distinct senses, as both Reid and Stewart (with all modern philosophers) expressly point out. In the former, the cause meant is a cause which produces, *i.e.* an efficient cause; in the latter, it is a mere antecedent, or, as Reid calls it, "a sign." The one principle is contingent and probable only, and, though influencing our belief, is regarded as dependent on the constitution of nature—not solely on that of our minds. It is liable to be tested by experience, and is, in fact, modified, corrected in its application, and strengthened by physical research. It may or may not, even on Reid's principles, take its rise from association. Indeed, in the form above given, it is doubly contingent; for it is only by experience that the general principle is applied to physical causes. All this is expressly stated by Reid and Stewart. But it is not the doctrine of philosophers alone. The uniformity of the laws of nature is, in a more or less general form, the subject of reflection to every thinking man; and by every theist the reversal of it is held to be in the power of the Creator. But even on the supposition of its reversal, the law of causality still operates; an efficient cause is of necessity sought for the change. The latter principle we cannot conceive suspended; to do so, would be to conceive a creation without a Creator. That it could not be derived from experience of the changes in nature, has been often shown, not alone from its characters of universality and necessity, but from the fact that "Causation is not an object of sense: the only experience we have of it, is the consciousness we have of exerting some power in ordering our thoughts and actions." "In no other case can we tell from experience whether an event has a cause or not."²

¹ Derived thus by Reid:—"Antecedently to all reasoning, we have, by our constitution, an anticipation that there is a fixed course of nature; and we have an eager desire to discover this course of nature. We attend to every conjunction of things which presents itself, and expect the continuance of that conjunction. And when such a conjunction has been often observed, we conceive the things to be naturally connected; and the appearance of one, without reasoning or reflection, carries with it the belief of the other."—*Reid, Works*, p. 199.

² Reid.

Even the single exception here made is not allowed by Mr Mill.

It is worthy of remark, as bearing on Mr Mill's opinions of the dependence of our capacity of conception on experience, that of these two principles, that one which has never been seen to be true, is that one which is endowed with a character of necessity and universality; while the other, of which we daily experience innumerable exemplifications, nay, which Mr Mill affirms we have found *always* true, is not a whit nearer the character of necessity in our old age than when we were infants.¹ That Mr Mill confounds these two principles, is manifested by every passage where he speaks of either. To each he attributes the characters of the other. He labours hard to prove that the inductive principle is contingent, which was never denied, and then assumes that the law of causation has the same character. In his chapters on the "Law of Causation," he more than once explicitly identifies it with the "Ground of Induction," while apparently unconscious that they were ever regarded as distinct. He thinks he has shown that the former is not necessary, because he finds himself able to conceive that in some distant planet the latter may not hold. Further, to confirm this opinion, he adduces the following facts:—First, In the early stage of human knowledge, many phenomena "which appeared irregular, not governed by any laws, not steadily consequent upon any causes, were ascribed to the direct intervention of the will of some supernatural being, and therefore still to a cause. This shows the strong tendency of the human mind to ascribe every phenomenon to some cause or other; but it shows also, that experience had not at that time pointed out any regular order in the occurrence of those particular phenomena, nor proved them to be dependent upon prior phenomena as their proximate causes." Secondly,

¹ We cannot forbear commenting on an illustration of the origin of the inconceivable, cited by Mr Mill from Sir J. Herschel:—"If it were a truth, universal and necessary, that a net is spread over the whole surface of every planetary globe, we should . . . make the necessity of some means of extrication an axiom of locomotion." And any proposition violating this axiom "would become, not only untrue, but inconceivable." Now, omitting the words *universal and necessary*, which destroy the whole force and pertinence of the remark, it cannot be denied that there are, so to speak, several nets spread over the surface of our globe, and possibly of every other, as the Atmosphere, Gravity, Friction. Yet there is not the slightest difficulty in conceiving the absence of each or all of these. No one but Mr Mill will regard Dr Whewell's professed demonstration, that all matter is heavy, as any exception to this remark. But Mr Mill confounds several different applications of the word inconceivable. He does not distinguish inconceivable and incredible: inconceivable in fact and inconceivable in manner, the inconceivable *That* and the inconceivable *How* (as with respect to the action of mind on matter, and of matter on matter); and, lastly (as in the controversy with Dr Whewell), the immediately inconceivable, and the inconceivable which only contradicts the demonstrative result of known principles.

Certain philosophers admitted "Chance as one of the agents in the order of nature, which could only mean, that certain events did not depend upon uniform laws of causation." Thirdly, "Human volitions are, even in our own day, believed by half the speculative world not to be governed by causes." And hence he infers, that "the existence of phenomena not rigorously consequent upon any antecedents, does not necessarily appear an inadmissible paradox." Now what do these facts prove? First, that the principle of causality operated in its full force before it could have been inferred from experience, and while the uniformity of the laws of nature was still not universally certain; secondly, that the principle is satisfied as soon as an efficient cause, or one supposed to be efficient, is arrived at. But what support these propositions can lend to Mr Mill's argument, we are unable to imagine; or how they can be reconciled with his statement, that "the law of causation asserts only this, 'It is a law, that every event depends upon some law.'" The fact is, that having (properly) rejected the consideration of efficient causes, he had no business whatever with the law of causation, which relates to these only. But he was unwilling to lose a principle which, at all events, had the recommendation of admitted certainty; and therefore he adopts it, with the precaution of using the terms in a sense in which the principle is neither universal nor necessary. This attempt to give the character of universality to what is at best only a derived consequence from a contingent principle, leads him to the following startling assertion:—"The law of causation is but the familiar truth, that invariability of succession is found by observation to obtain between every fact in nature and some other fact which has preceded it." This is a proposition which no one but Mr Mill ever considered to have "the rigorous universality and certainty of the laws of number;" nay, which we venture to say no philosopher but Mr Mill ever supposed to be true. Were it indeed true, so far from serving as a basis or a "main pillar" of inductive philosophy, it would form the very summit, and render further research needless.

With respect to the principle of which Mr Mill really stood in need, and for which he thus went hunting in the region of necessary truths, while it lay at his hand in the acknowledged sphere of the contingent, we suspect he will be found to approach Reid and Stewart much more closely than he supposes. He objects first to the description of the propensity to generalise usually given by metaphysicians of that school, namely, "Our intuitive conviction that the future will resemble the past. It has been well observed (he adds) by Mr Bailey, that Time has no concern with the belief, or the grounds of it." Now we must observe, first, that the expression here quoted as that usual with

the school of Reid and Stewart, was never, so far as we can remember, employed by either of those philosophers. With Reid it is, "Our conviction that in the phenomena of nature what is to be, will probably be like what has been in similar circumstances." With Stewart it is, "Our expectation of the continued uniformity of the laws of nature." "An intuitive conviction" they never call it. Can Mr Mill have confounded *intuitive* with *instinctive*? But, secondly, with respect to the element of Time, Mr Mill might have found the substance of Mr Bailey's remark in an author much more proper to be cited in correction of Reid, namely, Reid himself. "And what conclusions," he asks, "does the philosopher draw from the facts he has collected? They are, that like events have happened in former times in like circumstances, and will happen in time to come."¹ The principle may perhaps be stated thus: "The phenomenal laws of nature are independent of place and period (or of occasion and locality)." Thus stated, it is at once seen to be true only within certain limits, and these limits Reid is as ready to admit as Mill. "The evidence is only probable; the laws of nature may be changed by Him who established them," etc. As to its derivation (in the secondary form), is not the passage cited above (p. 106) such as might have been written by Mr Mill himself? Lastly, even the term, *instinctive*, need not alarm that author so much, if he would consider the sense in which it is applied. "By instinct, I mean (says Reid) a natural blind impulse to certain actions." "Perhaps not only our actions, but even our judgment and belief, is, in some cases, guided by instinct, that is, by a natural and blind impulse." Is this essentially different from Mr Mill's expression, "a blind unreasoning propensity," that he must protest against the one while he adopts the other? Or is the name, instinct, wholly inapplicable to a principle which, so far as it is irrational, is common not only to the sage and the infant, but also to the man and the brute? That in persons who have come to the use of their reason, the belief may have also a rational ground, is allowed by Reid and Stewart. But where these philosophers differ essentially from Mr Mill, is in their conceiving it necessary to assume this principle as the basis of our reasoning, whether it be regarded as *instinctive* or not. They considered it essential that reasoning should start from some first principles, regarding it as absurd to suppose every proposition capable of deduction from some other. Mr Mill sees no such necessity; he discovers no fallacy in proving one proposition by another in which it is implied. Descartes required at least one postulate on which to build his philosophy.

¹ Works, p. 484.

Mr Mill can build without a foundation, or rather, he builds his foundation upon 'the superincumbent edifice.

We may compare a system of human beliefs to a many-branched tree, bearing flowers, fruit, and foliage. These all derive their life and nourishment from the sap which the stem carries up from the ground, and sends in due proportion to the remotest leaf. This stem, says Mr Mill, is induction. See, this flower parted from its twig will presently perish; but think you, then, that the twig itself is the source of life? Cut off the twig, or the branch, or the great bough, from the parent stem, and will it not rapidly lose its freshness and its life? It must be the stem, then, which supports the whole. But may not the leaf, each for itself and for the whole, derive some necessary element from the ambient air? Or, may not this underground twig be a root, and needful for the support of the stem itself? No, replies Mr Mill, there are no roots; for all the branches we can trace depend for their life on the stem, and on it alone. Mr Mill, then, has fearlessly cut away the roots of all belief, and rendered reasoning, deductive and inductive, alike absurd and impossible.

But let us leave the metaphysical question of the basis of induction, which has no more claim to a place in a work treating of the Logic of Induction, than a discussion of the evidence on which we believe in an external world, or trust the testimony of the senses, and let us pass to the consideration of the Method of Induction.

If there be any method at all in what is called the Modern Induction, there ought to be at the present day no difficulty in ascertaining and discussing it. We have before us countless instances of its successful application: in each of these we can learn the process pursued; and, in fact, by the study of them, men daily qualify themselves for the further application of the method in question. It only remains then that the skill thus obtained be applied to these processes themselves, in order to discover by what laws they have unconsciously been guided, and to establish rules for the direction of others. If, then, the investigation appears to present so little peculiar difficulty, how is it that it has not been hitherto more successfully prosecuted? One reason may probably be, that having been regarded as a branch of Mental Science, it has been discussed by speculative philosophers alone. But their minds are generally unavoidably preoccupied by certain *a priori* principles, so that they do not tolerate that delay among particulars on which Bacon so justly insisted. In no other subject, perhaps, have theory and practice been so widely separated. Those who have been most eminent in the application of the "Inductive Logic," and who have

shown themselves, in the strictest sense, philosophical inquirers, have constructed no system of the rules which they followed; while the most popular theorists have not only been unable to put their theory to the test of practice, but they have not submitted to be taught by the practice of the acknowledged masters of the art. They have sought theoretical symmetry rather than practical truth. They might plead indeed, with some reason, that discoverers have not given to the world the steps by which they reached their conclusions; but, whatever weight may be in general allowed to this plea, in the case of a writer like Mr Mill, who professes to confine himself within the limits of the existing practice, it is quite inadmissible; and that, whatever be his opinions on metaphysical questions. But if he regards induction as the sole foundation of all our beliefs, he of course precludes himself from employing any other method of discovery or reasoning whatsoever. This is, however, the case with Mr Mill. He considers, for example, that it is from induction alone we learn that two and three make five, or that the same proposition cannot be at once true and false. These maxims may be false in other worlds, nor can we know that they will not be false to-morrow in this. With such opinions, to attempt to form a theory on mere *a priori* notions, or with the slightest admixture of these, must be wholly unphilosophical. Hypotheses, indeed (if they could take their rise at all consistently with such a system), may be admitted to help us on our way, but only on condition that the theory founded thereon shall be capable of perfect demonstration afterwards. In all this we have stated nothing which Mr Mill does not fully admit. "Principles of evidence (he remarks) and theories of method are not to be constructed *a priori*." The Inductive Logic must be founded upon a "survey of those inductions to which mankind have been led in unscientific practice." It might be expected that a writer holding such views would make a show of consistency in following them out; and would give us an array of inductions of unquestioned certainty and of traceable method; especially as his chief rival and antagonist in this field had set him the example. Dr Whewell had first compiled a "History of the Inductive Sciences," as a necessary foundation on which to build his philosophy of the same. His method was therefore unimpeachable; and, if his results were affirmed to be erroneous, he might challenge his opponent to prove his assertion by further and more accurate study of the History. Mr Mill might perhaps be expected to show that Dr Whewell had been misled by his *a priori* notions, and had not sufficiently studied his own historical collection; and it would not be too much to look for a contribution to a more thorough discussion and classification of these

historical examples. But nothing of the kind. If he has any fault to find with Dr Whewell's examples, it is that they are scientific ; for, as we have seen, the basis of the Inductive Logic is to be a survey of the inductions to which mankind have been led in unscientific practice. Such a survey, accordingly, we suppose Mr Mill has made. But if so, he has kept it to himself, and has succeeded so well in keeping out of sight the foundations on which he reared his theory, that not a trace remains of any survey, whether of scientific or unscientific practice. If we may form a conjecture from the order of his book, and his own remarks, we should say that his survey was chiefly directed to those principles which are generally considered to rest on a kind of evidence distinct from that of induction, such as the mathematical and other axioms already mentioned. In general, however, two cautions were necessary to be observed in making this preliminary survey. First, it must be shown that the inductions adduced are really of unquestionable certainty, as well as universally admitted to be inductions. But to what authority would Mr Mill appeal to establish this ? Is it to the correctness of the method by which they were obtained ? But the standard of method is yet to be settled ; and, in fact, the correctness of the method is to be in these cases inferred from the certainty of the conclusion. To the general opinion of mankind ? That would merely prove that they were in accordance with a "blind propensity ;" and in how many instances this general opinion testifies to fallacious inductions, Mr Mill has himself shown. To the fact that they have always been found true and never false ? That would be to argue in a circle ; and it is doubtless the argument which Mr Mill would adopt. The second caution is, that the method by which our exemplary inductions have been attained, shall be capable of being traced, and shall be really and unmistakeably exhibited. In the case of scientific inductions this is, as we have said, extremely difficult ; at least for one not versed practically in scientific research. Although difficult, however, it is not by any means impossible. But in the case of those unscientific inductions which are of unquestioned certainty, the discovery of the method is absolutely impossible ; for they have been arrived at long before the earliest time at which any philosopher can make his observations. The process by which they were obtained may doubtless be conjectured with probability, but only on the supposition that we have already formed our theory of method. The consideration of such inductions, then, while it may lend some assistance negatively, can throw no light on the construction of a positive method. Like the examples adduced in illustration, they may weaken, but cannot prove a theory. Mr Mill's theory, therefore, which is professedly

based on these, is again found to be vitiated in its very origin. It is not, therefore, without reason that he has omitted all notice of these necessary cautions.

But we may observe, further, that Mr Mill's notions of what constitutes induction, render it very unlikely that he should attain the truth by the consideration of selected examples, and impossible that he should do so otherwise. We do not now refer to his definition, or his opinions on the evidence of axioms, or to his regarding deduction as a mode of induction,—all which might, however, materially interfere with his selection of instances,—but we allude to the mode in which he applies the name. On the one hand, the process by which the moon's distance from the earth was ascertained, appears to be characterised as induction; a title to which it has exactly the same claim as a trigonometrical survey, or the gauging of a cask. The process is the same in both cases, the ascertaining of numerical data to be substituted in formulæ obtained by purely mathematical, *i.e.* (in the ordinary use of the words) deductive, not inductive reasoning. While, however, enlarging the bounds of induction on one side, Mr Mill contracts them as much on the other. Kepler, for example, is usually considered to have performed an act of induction when he established his famous laws. No, says Mr Mill; it was an act of description, not of induction, except, indeed, he adds, so far as Kepler concluded, that every point in Mars' orbit (for instance) was in an ellipse; that the planet would continue to move in the same orbit; and that what was true of the motion of Mars, was true also of the other planets. In short, these laws were not results of induction, except in so far as they were generalisations; and on this ground Dr Whewell is charged with misconception, when he cites them as instances of induction. At this rate, it will be hard to find an unexceptionable example, unless it be among Mr Mill's axioms. Yet he admits that the law of refraction was discovered by induction, although it is in the same predicament with Kepler's laws. It is most important to observe, that in all these instances, the actual generalisation was so facile, that it was assumed in the whole investigation; the only difficulty was to ascertain what the property was (common to all the observed cases) which, it was admitted, must be general. But this will be found to be true, in a greater or less degree, in most, if not all, instances of induction. Properties of classes are assumed to be general before they are definitely ascertained. This is, perhaps, most strikingly seen in Chemistry, where the generalisation is frequently so obvious as not to be even explicitly stated. In all such cases, the scientific part of the process must be excluded from induction, if Mr Mill would be consistent. It is, in fact,

excluded by his definition. With respect to the investigation of Kepler, it is strange that neither Mr Mill nor Dr Whewell has noticed the essential circumstance which renders it wholly unsuitable to illustrate the theory of induction. It is, that the sought property was a mathematical one. But, however unsuitable mathematical examples may be in physical or philosophical theories, yet, from their simplicity and certainty, they are generally the first which occur to the mind of a writer familiar with them; and so far as they affect his conceptions, they tend to vitiate them. This has indeed been often observed in other subjects; and in the present case, Mr Mill has given us an additional example of it. If other writers on Logic have been led astray by their attention to pure Mathematics, the Newtonian deduction has equally misled Mr Mill. The only act of induction which Newton can be said to have performed in his theory of gravitation, was in combining, "subsuming under the law" (to use Mr Mill's phrase), the motions of the planetary bodies, and the action of gravity on the earth's surface. This, we say, may be called induction, but not on Mr Mill's principles. For, according to that author, it is essential to induction that there should be some inference with respect to cases unobserved. But, in this argument, Newton only identified certain numerical results; as for the law of central force, that was deductively inferred from Kepler's laws, mathematically stated. The *Principia* is, in fact, throughout geometrical. The whole Newtonian theory, therefore, ought to have been excluded from Mr Mill's book on Induction, as it is obviously excluded by his definition. Far from this, however, it seems to have been, at least conjointly, or rather alternately, with Chemistry, the standard by which he mentally tested his most important principles, even where it is not expressly mentioned. It is only in this way that we can account for Mr Mill's doctrine with respect to hypotheses. Newton was able to demonstrate that the existence of a central force (or, more correctly speaking, of something in effect equivalent to a central force varying according to a certain law) was logically implied in the observed data. Mr Mill forthwith jumps to the conclusion, that no hypothesis must ever be admitted, unless it be such as to be capable of exclusive demonstration; and that no induction is complete, until it has been put to a crucial test. We need scarcely say that such a rule would at once put a stop to all inquiry into any but mathematical laws.¹ It would sound the knell of induction, the very

¹ Mr Mill appears to have seen this when he said, "In hypotheses of this [i.e. genuinely scientific] character, if they relate to causation at all, the hypothesis must relate only to the law of the variation of the effect, according to the variations in the quantity, or in the relations of the cause."

life and soul of which is hypothesis. It is fair, however, to state, that Mr Mill afterwards allows that *unscientific* hypotheses are absolutely indispensable to science. Mr Mill thinks his readers will hardly believe that Dr Whewell represents induction as a tentative process. We must agree with Dr W., that it is essentially, although of course not purely tentative; and if Mr Mill had recognised more clearly the functions of what he terms the generalising propensity, in conjunction with the tendency to refer phenomena to familiar causes, he would scarcely have doubted this. Whilst, indeed, he asserts that the conception which gives unity to the observations is often abstracted from the phenomena, he admits that the selection of a conception is a tentative process. But it is easy to show that the conception, said to be abstracted from the facts, must be formed at first from selected conceptions in a similar tentative manner; and we believe the case to be the same with other processes necessary to induction.

There must, however, always be a difficulty in disproving, and still more in establishing, from history, assertions as to method, at least so as to satisfy mere abstract speculators. Few discoverers imitate Kepler in communicating to the world the steps by which they reached the goal; and the path by which they lead their readers is rarely that which they themselves followed. The *Principia* certainly cannot be supposed to give us any insight into the order of Newton's discovery. But we want to know, not the shortest path, nor the most logical course by which the results could be attained, but the windings and turnings of that by which they were actually reached. And in some instances, doubtless, these can be traced to a limited extent. If we cannot follow the path of an individual observer, at least we can trace the relative advance of successive inquirers, and thus we can at least approximate to a general method. Much instruction, and perhaps of the most important kind, may also be derived from observation of the mode in which questions still doubtful are advancing to their solution, and still more by entering practically into the actual investigations. But conclusions thus derived, cannot be satisfactory to those who are not themselves versed in the history and progress of science, and perhaps also, to some extent, in the practical work of induction. Mere closet students are prone to build systems on a partial knowledge of results only; and their theories are therefore wholly inapplicable to the existing world, and useless as guides in practice. Bacon is less chargeable with this error (which he often censures) than most theorists. He was, however, led into error otherwise, and in turn appears to have misled Mr Mill, especially in that principle which caused him to exclude hypothesis. Bacon's

great error consisted in supposing that the phenomena of nature, notwithstanding their apparently infinite number and complexity, were capable of being arranged, dissected, and tabulated with tolerable completeness. The business of the philosopher was to separate each complex phenomenon into its component parts; arranging these according as they were modifications of the substance and primary qualities of a body, or merely relative phenomena. In order then to ascertain which of the former class stands to each of the latter in the relation of cause or form,¹ we have only to compare different instances of the occurrence of both. The quality and its form must, *first*, occur together; *secondly*, be absent together; *thirdly*, increase and decrease together. Bacon gives directions, accordingly, for the construction of tables of Presence, of Absence in *proximo*, and of Variations. He recognises, however, the fact, that in consequence of the complexity of nature, the classes of observations implied in these canons must be combined. We cannot enter further into Bacon's method at present, as we only wish to show its relation to that of Mr Mill. The latter author has, in the first place, adopted the principle of the separability of the phenomena of nature, which the progress of science had shown to be a chimerical idea; and, in the second place, when he proceeds with a flourish to exhibit the method of experimental inquiry, he borrows Bacon's three rules, forms them into canons of four experimental methods, and vaunts that he has solved the problem which puzzled the wisest of the ancients. Meanwhile he disparages Bacon, "the value of whose contributions to the philosophical theory of induction has been exaggerated." We think the greatest exaggeration in the case has been the painful construction of four several methods out of the threefold rule of a single method.

But in his anxiety to advance beyond Bacon, Mr Mill has exaggerated the error just mentioned. Bacon saw clearly that in the phenomena actually met with in nature different causes and effects would be combined in all possible ways; and his rules, therefore, were directed to the object of eliciting the truth from these complex phenomena. In short, his great object was to enable the inquirer to cope with the complexity of nature, which he admitted, while maintaining that it was not inextricable. But Mr Mill's methods ignore the complexity altogether, and he is silent on the essential preliminary analysis and reduction. In his defence, indeed, he claims, as of right, the same exemption that is granted to the syllogistic Logic, of omitting the *material* part of the

¹ As Bacon's language, though primarily referring to what he calls the Form, is so framed as to be equally applicable to physical causes generally, we shall, for convenience of comparison, use the latter term throughout.

inquiry, although the most difficult. It strikes us as rather bold, on the part of an author who sets about extending the sphere of Logic, and, in fact, constructing what may be called Material Logic, first to omit the only question that presents the slightest difficulty, on the ground that it does not come within the sphere of the ancient Logic; and then to claim the honour of having achieved what had been regarded as an impossibility. We cannot permit him to evade the question in this manner.

The assumption which is necessary for Mr Mill's theory is, that all the elements of the phenomenon examined, in two or more cases, and all its antecedents, are separately before the mind, and nothing is required but the comparison of these. Now, not only is this not the case, as of course Mr Mill allows, but the nature of the case is such, that imperfect knowledge does not enable us to make proportionate approximations to the truth. We must always, indeed, be far from the complete knowledge of the elements of a phenomenon; but, besides this, our knowledge of effects and causes is only complete so far as they are known in correlation. Causes are not known at all but by their effects, and compound effects cannot be separated except so far as their causes are known;¹ consequently the dissection with which our author supposes us to begin, is only possible (in any degree) by means of the (partial) solution of the problem which is supposed to be effected by means of it. The two operations advance together. If we had our phenomena once reduced to ABC, *abc*, we should have no need to consult Mr Mill, in order to learn how to draw our conclusions. But in nature we must always allow for the existence of an X, an unknown combination, alongside of our ABC. Or, more correctly speaking, we have not even ABX, *abx*, but an unknown function of these quantities, *f* (A, B, etc., X, Y, etc.), ϕ (*a*, *b*, etc., *x*, *y*, etc.).

But if the separation of the complex phenomenon requires the discovery of the laws of the simple phenomena, and conversely, how is the problem to be solved? The answer is, that as the mere contemplation of the phenomena will not lead to the discovery of any law, the mind must itself provide the solution, each step being supplied by conjecture founded on analogy, and verified by application to the instances observed. As in the solution of a mathematical problem in series, etc., by the method of indeterminate coefficients, the inquirer advances step by step until a law is recognised by its correspondence with some conception previously in the mind, so, in obtaining any general law, the mind has not only to suggest what new observations or experiments require to be made, but to supply the relation between them;

¹ The reader who is familiar with Bacon will perceive that this remark does not apply to his Forms and Qualities.

for relations are not, and cannot be, the objects of sense. The action of the mind is, however, so rapid, that it is impossible to draw any marked line of separation between the respective suggestions of observation (which themselves imply correspondent conceptions of the intellect) and the conjectures of the understanding. The understanding is continually forming its partial conceptions from what has been already discerned, and by the aid of these views in a more connected aspect the phenomena under consideration; and, in an inconceivably short space of time, goes through the process of modifying and correcting, or of rejecting and re-adopting these conceptions. This process takes place at every step; and thus by degrees the conception is evolved and rendered clear. Let the example before us suffice for illustration. If Mr Mill had sought to elicit the theory of induction from the mere contemplation of the instances in which the method has been hitherto practised, imperfectly recorded as they necessarily are, and inadequately understood, as, without a theory, they must be, we fear he would have given us a much less complete view even of the questions which he has treated. But he had, however unconsciously, commenced the formation of his theory from the moment that he fixed his thoughts on the subject. It is natural, indeed, for a philosopher, in the pursuit of truth, to lay down for himself inflexible rules, and to bind himself, as Bacon would have had him bound, to follow nature in a submissive and teachable spirit; but he very soon finds that she does not lead her worshipper by the hand; she does not even point out a beaten track; but she enables the inquirer to provide the compass and the light by which, properly used, he may find the true path; and he is sure to err from the way who, neglecting the offered aid, closes his eyes, and asks to be led by the hand like a little child.

If there is any inquiry in which comparison of the facts might be expected to be adequate, it is where the law sought is purely mathematical; for here we have, as we may say, the analysis ready performed; and if, in such cases, we find conjecture or hypothesis occupying a prominent position, we may reasonably infer that, in other cases, it will not be of less importance. It would be sufficient to appeal to mathematicians on this question; but, fortunately, we can adduce historical proofs. Kepler's investigation of the orbit of Mars, was nothing more than "trying successive hypotheses until one was found which fitted the phenomena;" and, moreover, the ellipse which finally appeared to satisfy the conditions, did not give results identical with those of observation. Such also was the character of Kepler's inquiry into the relation between the distances and periods of the planets, which, notwithstanding the simplicity of the law, was long unsuccessful. In another case, again, even

Kepler's unequalled industry and ingenuity failed to discover, in the numerical facts before him, the simple law of their dependence; namely, in the case of the law of refraction.¹ These last two cases may almost be considered as *instantiæ crucis* between the mechanical and rational methods. But we are able to cite another notable instance from that which is often represented as Newton's great induction, the establishment of the identity of gravity with the earth's attraction on the moon. Newton remarked, that gravity acted at all distances from the surface of the earth at which the experiment had been tried; and the question struck him, might it not extend as far even as the moon; and if so, might it not be the force which, varying inversely as the square of the distance, retained the moon in her orbit? He made the necessary calculations, and obtained a result near enough to encourage further inquiry, had he thought the suggestion probable. But it must have seemed to him, at best, extremely doubtful; for the slight deviation from exactness in his results, induced him to give up the investigation for fourteen years. Thus the first step in the great discovery of Newton was a conjecture, and one which the author was perfectly aware was not logically warranted, nay, which he apparently thought extravagant. But, says Mr Mill, this hypothesis was legitimated by the possibility of its exclusive demonstration, and was at length actually so demonstrated. Was it so indeed? Did it not assume the rotation of the earth, and the annual revolution of the earth and planets round the sun? When were these hypotheses demonstrated, nay, when were they supposed capable of demonstration? But if not, they were, on Mr Mill's principles, unscientific hypotheses. Their simplicity, and the truth of the results to which they lead, could not prove them, or exclude other hypotheses. "It is no evidence of the truth of the hypothesis, that we are able to deduce the real phenomena from it." When Mr Mill wrote these words, no other proof had been given, or even supposed possible, of the fundamental hypotheses of the Newtonian theory;² nay more, that theory postulated a supposition which was actually false, namely, the perfect accuracy of Kepler's laws. Yet Mr Mill chooses this theory as his model of a "perfect specimen of deduction."³

¹ Quoted by Mr Mill as an instance of Discovery by the Method of Agreement.

² Whether they have been proved by more recent discoveries, as those of MM. Foucault and Fizeau, this is not the place to discuss, nor does it affect the question.

³ Even granting the hypotheses, the theory of gravitation can only be shown to agree approximately with the phenomena; but, being a mathematical approximation, it must be at least included in the true theory. A hundred years after its supposed demonstration, an eminent mathematician thought he had disproved it.

But if his criterion of scientific hypothesis does not hold, even in the case which suggested it, and that one partly mathematical, we challenge him to produce an instance in which it does hold. We may go further, and state positively, that Mr Mill's condition is excluded by the nature of the subject; for in no physical theory whatever is it possible to have perfect and exclusive demonstrations, since we can neither know all the circumstances, nor all the relations of any one physical agent. It is only when the effect can be made to reproduce its cause, or when, as in mathematical problems, the law is but a different statement of the phenomena, that demonstration, even in appearance, is possible. That part of the Newtonian theory which was demonstrated, was purely mathematical; as soon as the physical elements of the problem were introduced, it became necessary to be content with evidence not demonstrative.

Once more, let us apply to the law of causation, as a result of induction, the principles which Mr Mill himself has developed, as we have now glanced at them. We must look at it now, not from the ground of metaphysics, but from the author's own point of view. The method of simple enumeration by which it has been obtained is valid, he observes, in one case, and in one only, namely, when we can be assured that, had there been any exception, it must have fallen under our notice. Now is this the case with the law in question? Doubtless, the field of observation within which we have been in the habit of applying the law, without finding ourselves led astray thereby, has been the largest possible, co-extensive with all change observed or imagined. But it by no means follows, that if the law had been false, we should have known the fact. On the contrary, such is the nature of the law, that as we can have no experience of its truth—and it is because efficient causes cannot be found, much less the connection of causation, that philosophy has ceased to search for them,—so also it is absolutely impossible that we should know the existence of an exception. If a change should take place uncaused, we should be compelled to suppose a cause, if we reflected upon it at all. Even in the sense of physical antecedents, it is not true that the "vast majority of events are perceived to have invariable unconditional antecedents." Against Mr Mill's opinion on this question, probably arising from his confounding in this aspect classes of events with individual events, we venture to affirm that that gentleman, while sitting in his chamber within earshot of the streets of London, will often, in one hour, receive, through his tympanum, thousands of sensations of the antecedents of which he knows nothing, Or, if he choose to walk the streets, and receive countless sensations through the sense of vision also, will he know more about their antecedents? Or, passing the question

of the causes of sensation, of how many changes which he witnesses, will he be able to trace the invariable antecedents? The question needs no answer.

But we need not go about to prove that this principle is, in a vast number of instances, not known to be true.¹ Mr Mill admits expressly, that in the great class of changes which come under the head of human actions, we cannot perceive the cause. He might go further, and include the actions of all animated beings, in none of which can the antecedent be made an object of perception to us. Add to these the various processes of life, both animal and vegetable—for Mr Mill admits that “the sequences which we observe in the production and subsequent life of an animal or a vegetable are mere empirical laws,”—and we have already a pretty large field in which we cannot ascertain the truth of the law, and yet are not the less firmly convinced of its inviolability. Mr Mill, without hesitation, applies the law in question to all these cases, although this, on his own showing, is a *μετάβασις εἰς ἄλλο γένος*.

It appears to us that the subject of empirical laws might have been placed in a clearer light, had the distinction between laws and causes been kept in view. As the mind is impelled by the principle of causality to seek, or rather to suppose, efficient causes, so it does not rest satisfied that it has ascertained even the physical cause, unless that be the proximate. The question always recurs, How does this produce the effect? and the research continues until a law is arrived at which connects, directly and generally, the properties of body, thought as objectively existing, and those thought only as relative to our sensations,—in other words, the primary and secondary qualities. When we have learned that a certain kind of vibration in a column of air produces the sensation of a certain musical note, we can go no farther; and we say the phenomenon, in any particular case, is completely explained, when the existence of the antecedent vibration is established. So, if we could show that a certain superficial structure always excited a certain kind of motion in a luminiferous ether, and that this motion, communicated to the eye, produced the sensation of blue colour, we should consider that the cause of blue colour was fully ascertained. Now this was precisely the class of laws which Bacon proposed to investigate, under the name of Forms. Mr Mill affirms, that the whole theory is vitiated by the assumption of a universal law of co-existence. This remark only shows how far Mr Mill was from forming a clear conception of the theory of Bacon.

We had intended to make some further observations on the

¹ Compare also the passage cited above (p. 106), “The difficulty is to find, what description.”

four methods, and on the examples cited in illustration, but space forbids. It has, however, been sufficiently shown, that these are not methods of discovery, but of proof, and that of the final step; and that, moreover, they are not methods of induction, —the generalisation, which is stated to be the essential characteristic of induction, being assumed; as having been, in fact, performed once for all.

While we think, therefore, that Mr Mill has in his system erred materially, misled by his metaphysical opinions, we do not wish to be understood as depreciating the merits of his work on the whole. We admit that, in the development of his system, he has brought together much valuable and suggestive matter; but “the great problem of Induction” he has left nearly where he found it.

There is one merit of Mr Mill which we cannot pass over, as it is unfortunately more rare among philosophers than it ought to be, although from no class of writers ought it to be more expected;—we mean the candour and courtesy with which he uniformly treats the writers from whose views he differs. He has given us a lesson in this respect; for we confess we should have felt inclined to treat him with more severity, had we not been disarmed by his admirable modesty and candour.

ARTICLE V. "*Tom Brown's School Days.*" By an OLD BOY.
Ninth Thousand. MacMillan and Co., Cambridge, 1858.

ARNOLD went to Rugby in 1828. He died in 1842. It is thirty years, then, and only thirty years, since Arnold came first into communication with the public.

It has frequently been observed, how short the period has often been in which men have done that which has fixed their mark upon the history of their country or the world. But the men of whom this has been observed, have been usually the heroes of war or politics—enjoying the advantage of material power or supreme place.

Arnold's work was a moral work; and it is certainly remarkable that in so short a space as fourteen years, in a position not then as prominent as he has made it for his successors, he should have done as much as he did to influence his generation.

Yet his position had some singular advantages. One of the highest authorities on the subject holds that the brain "*grows to the condition under which it is habitually exercised.*"¹ Certainly, if a man have truth to deliver, whether moral or intellectual, no position is so much in his favour as one which brings him into contact with a large number of the more intelligent classes during the period of their chief moral and intellectual development. By referring to the register of Rugby School, we find that upwards of 1300 young Englishmen of these classes passed through Arnold's hands while he was head master. Even this alone, supposing these youths generally to have received some tincture of Arnold's spirit, and to contain only an average proportion of talent among them, would represent a power of some importance in the thinking world at the present moment. But nowhere does the *esprit de corps* hold stronger sway than at our public schools. Nationality is, perhaps, apt to exhibit a vivacity in inverse proportion to the area to which it attaches. "The boy," as Arnold himself once remarked to the writer, "is a *καταφρονήσις* animal;" and an ugly reverse of the enthusiastic attachment which a public school generates in its own sons, is usually a decided jealousy, commonly assuming the artless disguise of contempt, of all similar institutions. Hence a public school is rarely slow to claim, and is very tenacious in maintaining, any distinctions to which it can fairly pretend. This feeling, doubtless, combined with worthier, has had its operation in the case of Arnold and Rugby. Arnold, who—though deeply revered

¹ Carpenter, "Principles of Human Physiology," 5th Edition, p. 591.

and cordially feared by those who knew the man or disliked his opinions—had yet seemed to hold no adequate place in the public estimation during his lifetime, immediately upon his death became famous. Those who remember that sad date will remember how unexpectedly loud an echo the event produced. England was wiser than she knew. The school, and those who governed it, felt now, if they had not felt before, the value of his spirit; and, for the next seven years, the present Bishop of London, Arnold's successor as head master, walked worthily by his light in his steps. Of course, during this period, Arnold's name was taken up as the glory of the school, and these seven years were years of plenty. The public showed their admiration of a man, now better known than ever before through the publication of his Letters and Mr Stanley's biographical notices, by sending their boys to catch Arnold's spirit, as they hoped, at Rugby; and between eleven and twelve hundred youths were entered under Dr Tait, to each of whom, no doubt, the name of Arnold, if no more, was a sort of personal distinction. How far the late head master of Rugby, Dr Goulburn, may have fostered the *religio loci* we cannot say, but it is not likely that it should have been altogether disavowed. His pupils may therefore be reckoned as adding some thousand more to the number of those who, having entered, or being about to enter, the middle and upper classes of English society, have brought, or will carry thither with them, some tincture probably of Arnold's views, and certainly some pride in his name.

Independently, therefore, we may almost say, of the inherent value of the truths which Arnold represents, we have here a large number of individuals, circulating in the more influential regions of society, who are, as it were, officially bound to support him. Arnold's name is to a Rugby man somewhat like what Wellington's is to the English army, or Napoleon's to the French. Without confounding this attachment with moral adhesion, that publication, which is one of the essential conditions of the prevalence of all doctrine, whatever its merit, has thus been largely secured by Arnold's connection with Rugby.

But there have obviously been disadvantages, as well as advantages, involved in this connection. The love of truth was a distinguishing feature of Arnold's character; and had he ever conceived of himself as occupying that place in the world which he now occupies, he would, we believe, before all things, have desired that both his character and his views should have been *truly* appreciated. To the love of fame in the vulgar sense, Arnold was an utter stranger. That he never contemplated posthumous distinction, or rather posthumous power for good—for that would be the form it would take with him—is not indeed as-

sented. We have heard him say, in that quaint, Luther-like phraseology which gave such vividness to his familiar conversation, that "doubtless it was good for a man to have to do with Mr Posterity," referring to the responsibility which it should impose upon a thoughtful man to know that his words should not die. But not for an instant, certainly, would Arnold have bartered the least grain of what he held for truth against any amount of personal distinction to himself. Certain of this feeling on his part, we suspect that it would have been with the reverse of complacency that he would have contemplated, had it ever occurred to him to do so, his adoption as the "hero" of Rugby, or of any other class. For he would have remembered that a man, or even a truth itself, can scarcely be thus espoused by any section, large or small, without surely risking misrepresentation, through the spirit of party excited, both for and against. If we needed proof that this would have been his feeling, we have it in his life itself, which was, in fact, a single-handed fight in behalf of truth, or what he considered such, against all parties. Maintaining often, as he conceived them to require support, the truths which were among the watchwords of parties, he never belonged to any party, because, with the same vigour with which he maintained the truths of all, did he assault their falsehoods. Hence, in turn, his hand was against every man's; and Socrates now, now Plato, had to give place to Veritas, whom he loved still better. And the more complete proof still is, that we find in his life and works now so much of sympathy evidenced or expressed with *all* the sections of men into which the body, politic or religious, is divided, that few cannot plead, on some point or other, his example or his doctrine.

With some feeling that Arnold, whether from this or other causes, *has* suffered some misrepresentation, and in the hope of recalling men to study a character and mind so eminently deserving of study, in the records of his own life, and in his own writings, we take advantage of the appearance of a work, whose remarkable success shows how warm and wide an interest may be excited by the combined attraction of the names of Arnold and Rugby, to offer some observations upon the school (using the word now in its larger sense) which has grown out of Arnold's teaching, with the especial view of indicating some important differences which we find to exist between the spirit and doctrine of the head and those of the disciples.

We shall begin by endeavouring to grasp some of those leading features of Arnold's mind and teaching, which, with the modifications we shall have to point out, give their character to his school.

To any one who might choose to work out the fancy, there is

- a curiously exact analogy open between the vegetable productions of the earth, and the different characters exhibited by different classes of human minds. Assuredly, from the cedar tree of Lebanon to the hyssop growing out of the wall, it would be easy to find the human antitype. We shall satisfy ourselves with observing that, while the habit of the classes of creepers and climbers is amply represented, and while even among standards there are those—not always of least luxuriant growth or humblest figure—which waste themselves in a multitude of stems and vagrant shoots, there is one class which especially resembles the aristocrat of the vegetable kingdom—the forest tree—in its grandest and most distinctive feature,—that single trunk, namely, into which all the forces from the labouring root combine, and from which, again, all its wealth of productive energy re-issues. Arnold's mind belonged, unmistakeably, to this noblest order, and was one of its noblest specimens. Self-contained, and not possessing that banian-like capacity of developing new supports and centres of nourishment to each extending branch which marks only one, and that the smallest, although doubtless the most wonderful, species of the class, it is impossible to study his character without acknowledging, as a great cause of the impression which he has created on the world, the unusual massiveness and majesty—to adhere to our illustration—of that trunk idea, into which all the powers of a most vigorously, if not very variously, endowed nature were gathered, in order to distribute again thence its rich luxuriance of fruit and shade. This ruling idea, through which the whole vast energy of Arnold's nature passed, was the idea of *work*; but essentially religious as his mind was, work to him, it must be remembered, took always its *religious* ground. The truth upon which Arnold stands raised as a moral teacher, is to be found in a combination of the preacher's "whatever thy hand findeth to do, do it with thy might" (Eccl. ix. 10), and St Paul's "Whether ye eat or drink, or whatsoever ye do, do all to the glory of God." His principal intellectual effort—that well-known conception of the Church on which he spent his affection so freely, and to which he alludes with such touching humility in those last words spoken as from the grave,¹—was, in fact, no more than the working out of this idea.

¹ Few who have read Mr Stanley's *Life of Dr Arnold* will forget the touching incident here referred to, but those who remember it best will be the most willing to be reminded of it. Dr Arnold died suddenly, it will be remembered, early on the morning of Sunday, June 12, 1842. After his death, the following entry was found in his diary—the last work of the previous night, and of his life:—

"*Saturday Evening, June 11.*—The day after to-morrow is my birth-day, if I am permitted to live to see it—my forty-seventh birth-day since my birth. How

But, while comparatively few troubled themselves to consider Arnold's views on Church Government—whether to support or oppose them—and his pupils, probably, scarcely knew what they were,—the same principles took another form, which brought them necessarily under the observation of all with whom he came into contact. In England, he found the religious world divided into the old parties of Faith and Works. To which party a man of Arnold's intensely practical turn must adhere, could not be doubtful, and he espoused that side of the truth which he approved with the passion which he carried into everything. Hence, while Arnold's teaching, whether in the pulpit or elsewhere, was in reality abundantly imbued with religious sentiment, nor did he refuse entertainment to as much of religious philosophy as his mind could apprehend—that was not much—the bias of his lesson was always toward the practical. He was distinctively an advocate of *religion*, in the sense in which one of his own pupils, probably deriving the thought from this source, opposes it to *devotion*. “Using these terms in opposed senses,” says a pupil of Arnold's, “by religion I understand the practical working out of the Christian morality; while devotion refers to the action of the feelings and imagination in reference to the Divine Being.” This character reigned in all his life and teaching; and, doubtless, it was confirmed, if not deepened, by the antagonism in which he found himself—not altogether unwillingly perhaps either, for there was a strong combative spirit in Arnold—with the contemplative and philosophical schools, represented by the Romanist and the Rationalist. Assailed by them, he insisted on his own view with double energy; and hence, doubtless, the distrust with which—till his Life by Mr Stanley cleared away for ever all suspicion as to his own deep devotional feeling, and showed the distinctively, almost narrowly, Christian character which it assumed,—even that part of the religious world

large a portion of my life on earth is already passed! And then—what is to follow this life? How visibly my outward work seems contracting and softening away into the gentler employments of old age! In one sense, how nearly can I now say, ‘Vixi.’ And I thank God, that as far as ambition is concerned, it is, I trust, fully mortified; I have no desire other than to step back from my present place in the world, and not to rise to a higher. Still there are works which, with God's permission, I would do before the night cometh, *especially that great work*, if I might be permitted to take part in it. But, above all, let me mind my own personal work—to keep myself pure, and zealous, and believing,—labouring to do God's will, yet not anxious that it should be done by me rather than by others, if God disapproves of my doing it.”—(*Stanley's Life of Arnold*, vol ii. p. 334, fifth Edition.)

It should be remarked, that such expressions as, “*if I am permitted to live to see it*,” and “*with God's permission*,” formed no part of Arnold's phraseology, as they might in the case of some good people. On true principles, as we conceive, both of taste and feeling, his language was perfectly simple, and the spirit, not the form, indicated the convictions of the Christian. When he used expressions, therefore, of this kind, they have their full meaning.

which thankfully accepted his dauntless championship, regarded him as a Christian teacher.

Another point—an accident of Arnold's position, for we count it little more—the fact, viz., of education having become his speciality, has, to some extent, influenced his followers. We call this an accident; for, great as we conceive the good to have been which he did in his position as a schoolmaster, and doubtful as we may feel whether he could have had as much, or at least as immediate, influence for good in any other position, we must yet also be permitted to doubt whether this was his natural sphere. In fact, we do more than doubt. He admirably fulfilled the situation in which God's providence had placed him, and for which; *in some respects*, he was admirably fitted. So, we have little doubt, might Cromwell have made an exemplary brewer to the end of his days, had no opportunity been afforded him of developing the general and the governor. In similar circumstances, as little can we conceive Arnold's having remained a schoolmaster as Cromwell's abiding peaceably at Huntingdon. On this subject, however, not alien from our present object, we propose to offer some remarks just now. At present, it is enough to observe, that the circumstance of Arnold's connection with education has had the happy effect of engaging the interest of almost all his followers in the subject, and thus largely swelling the ranks of that crusade against ignorance which is the great glory of our times.

It is in the three points, then, here indicated—viz., a strong sense of the duty of work, a decided tendency to the objective as opposed to the subjective view of things in general, and a considerable interest in education—that we find the distinctive features of Arnold's school. And while it would be absurd, of course, to suppose that wherever we find these peculiarities impressing the action of society at present, we are to attribute them to any direct influence of Arnold, we are certainly justified in regarding him as having, in a marked manner, contributed to their prevalence.

And regarding the fairer side of our present social life, we shall see how considerable a portion of its good bears distinctively these Arnoldic characters. Never, probably, has the *duty* of work been so generally acknowledged as at present. Whether we look to church or state, we find the old jolly sinecurism given up in theory, and all but extinct in practice. In public or in private life equally, a fair discharge of duty is required as a condition of respect; and where this is shown, respect is never refused. In general, owing to the prevalence of this idea of the duty of work, unless we except that spasmodic period when, under very different impulsion, the feverish energy of the first Napoleon

impressed an almost frenzied activity on all the functionaries of his vast empire, no nation probably was ever so well served by its paid officers and its citizens as England at present, and we are greatly disposed to believe that England owes much in this respect to Arnold's example, and to the impression it has made on those who witnessed it as his pupils, or have admired it in his Life.

But, when we come to examine how far his followers have supported him in this, we conceive that we observe a great difference. Arnold was a man of passion, as are all who have exercised immediate influence on the world, and he held his idea of work in immediate connection with his deep Christian feeling. His school appear to us defective in this grand point of motive force—what was passion with him is conviction only with them, or rather, it would be truer to say, what was passionate conviction in his mind represents itself as calm, almost dry, conviction in theirs. And this connects itself very closely with the second feature which we have pointed out as distinctive of this school—their decided preference for the objective. Arnold's mind took this character, because the understanding was in him much more strongly developed than the higher intellectual powers. He admired Aristotle, we have heard him say, more than Plato, because it seemed to him grander to confine himself to the truth, which could be defined and proved, than to launch out upon the sublimest speculations. This adherence to the positive was at once his weakness and his strength. It was this which led him into what men called his *crotchets*. His crotchets were rigorous deductions of the understanding from the facts which he took as premisses. It made his strength, because it gave a reality to all his views, right or wrong. But passion with him supplied the deficiency of imagination, and gave a greatness even to his inferior conceptions. His school take after him in their adherence to the positive; but, while they are equally defective on the side of imagination, they have not like him the compensating force of passion to vivify their opinions. Hence a certain hardness and coldness of tone is apt to disfigure their views, and to rob them of the attraction which would naturally attach to their unselfishness and substantial justice. How is it that among so many men of undoubtedly superior talent, who have sprung from Rugby during and since Arnold's time, not one, so far as we know, has been able to take hold of the popular mind? There are many who are highly respected, and more than respected, admired even, within the limit of their own larger or smaller circle. They are excellent administrators, clear and enlightened and earnest writers, sensible preachers, accomplished poets, etc., but no one takes hold of the world. And this we do not believe to be from want of genius, men of

certainly less genius contrive to make more impression. How is this? We attribute it in part, perhaps, to a moral discipline, which has rendered them averse from the *arts* by which popularity is often caught, but more to a really refrigerative effect produced by a training in which the objective was made so predominant. We get excellent utterances from them, but their truth is flattish, and smacks of the reservoir; we do not find them offering us the sparkling element which comes fresh from the well-spring, and even if it be scant in quantity, speaks yet to the great underlying deep.¹

It seems ungracious, perhaps, while admitting so fully, as we trust we have been felt to admit, how valuable, or we might almost say how invaluable, an element Arnold's school forms in the society of our day, to express anything but gratitude to them, and a sense of the social benefit which they confer. It is not incompatible, however, we hope, with a full sense of this benefit, to appreciate its shortcomings. It is impossible for any earnest man, examining, with a sense of its meaning, the social condition of his own time, to confine his reflections entirely to the actual passing moment. We cannot contemplate the force of the stream without thinking of what this vast body of waters is hurrying on to do. To-day unavoidably carries the suggestion of to-morrow, and we are compelled to ask ourselves what the present portends of apprehension or promise for the future. And here it is that the character of a school, deficient in imagination and sentiment, becomes unsatisfactory. All we can say for the Rugby school is, that it does its best to impress right notions and sound principles upon its own generation; but will these hold? We have our doubts on the point. The course of the world at large is governed, not by principles, but by sentiments and ideas, and it is only so far as the former can be volatilized, so to speak, into the latter shape, that they dominate society. It was Arnold's faith, as opposed to his doctrine—the spirit of the man, not the tenets he inculcated—which created his school, and if we are correct in believing that his followers hold the doctrine without, or, at least, with but a faint measure of the faith, we are justified in apprehending that it has lost its vital element, and may be expected to become ere long extinct, or rather, let us say, again dormant, till another shall arise to break its slumbers.

¹ Lord Stanley's influence is already considerable, and is likely to increase. He may be expected to play a very important and most useful part in public life. But he will be a statesman for quiet times, rather than for times when leadership is wanted most, and his strength will lie in the moral approval of sensible men, rather than in the sympathy of the masses. In literature, Tom Brown has made the nearest approach to a speech, which the "general" understand, of any Rugby man that we remember. Did he, perhaps, take in only half the discipline of Rugby—the intellectual waiting the summons of Maurice and Kingsley to awake it?

But, in expressing this opinion of the probable dissolution of Arnold's School as such, we are under no apprehension as to the permanence of the moral influence of which his life and writings will be an enduring source—the influence which, we may boldly say, he would himself have most cared to retain. His School falls to pieces because, in fact, he left no sufficient material for a school. The founder of a school need not have Arnold's great spirit, but he must have done what Arnold did not; if it be not absolutely essential that he have enunciated new truths, at least he must have elaborated truths already known, and wrought them into a coherence which shall give his labour not only substantive value as results of thought, but, if not permanent, at least a temporary importance. Arnold did something towards this, and it was the mistake to suppose that he had done enough to make the position in question his own. Now, it is felt that his thinking was not systematic enough for this—that in fact it was little more than what we may call the accidental exertion of a powerful understanding, always directed toward the practical rather than the general aspect of a subject, on the points which the exigencies of his day happened to bring before him with a practical call upon his attention.

Natural, therefore, and almost inevitable, as the mistake has been, it has been a mistake to attempt to make of Arnold the head of a School, or of any combination by its nature sectional. The success of the effort could have been only to give up to "party what was meant for mankind." Happily, the largeness of Arnold's spirit, always greater than its intellectual frame, and now more distinctly exhibiting its superiority when the restrictions which the latter laid upon it are no longer enforced by the passion of the living man, have defeated the object of a mistaken enthusiasm. And far more just, as well as more honourable, will be his place, remaining to posterity a good man, free of party ties, and speaking to all humanity in his noble life and living words, as a true citizen, with Leighton, and Taylor, and many more, of that Commonwealth where there is One Head, and all the rest are "brethren."

We referred just now to Arnold's position as a schoolmaster, and it will not be alien from our present object of inducing men to look at Arnold for themselves and in himself, rather than at secondhand, in the representations of his admirers, to examine this point, for there prevails a very general misconception on the subject. That Arnold was a great man in the position of a schoolmaster, and that, by force of his own greatness, he even became a great schoolmaster, are propositions not affecting the question we are disposed to moot. The public has long since set him on a pedestal as a *model* schoolmaster. The pedestal we should

assign him would not be lower, but it would not be that; and the truth whether as regards our conception of the schoolmaster's office, or our appreciation of a great man's character, requires more discrimination than we think has been yet applied to this particular point.

One great qualification which Arnold possessed for the schoolmaster's office, was his own youthfulness, if we may so express it, of character. "I enjoyed," he said, in one of his letters, speaking of the time when he took private pupils, "and do enjoy the society of youths of seventeen or eighteen, for they are all alive in limbs and spirits at least, if not in mind, while in older persons the body and spirits often become languid without the mind gaining any vigour to compensate for it."—(Life, p. 27.) Arnold was himself in body and mind equally alive, and this abundant vitality created of itself a most powerful sympathy between him, and boys, and young men, in general. And, in fact, if we desired to give the best idea of the sort of relation he held towards his pupils, we should say that it was, *en grand* of course, very much the same sort of influence which a fine elder lad at school has over his juniors. About most *men*, even the most genial, there is a constriction and fixity of form which keeps boys at a distance—the crust of their humanity is too obviously cooled, however warm the heart may still be. Arnold had nothing of this, or, at least, his form had nothing of that symmetry which gives the impression of formality. True, boys kept their distance, but it was not from any natural repulsion such as usually separates the boy from the man, but from simple respect—and admiration—of his power of nature. They would have *liked* to get nearer to him, as to their hero of the schoolfield, but they remembered his *weight*. Perhaps his very appearance and manner, full of true dignity, but *tant soit peu* awkward in its simplicity, conduced to maintain this relation. Long rather than tall, strong, but not well made, his shoulders rather rounded, the upper part of his body usually in advance of the rest, but with the air of a hard walker rather than of a student, scrupulously clean and fresh in his dress, but the reverse of prim; no one who saw him striding away in his white trousers along his favourite lanes, now dropping the bridle of his wife's pony to rush up a hedge bank (and knock off his hat in the charge) in search of the first violet—or, it might be, the first piece of dog-mercury, for his pleasure in flowers being that of association only, the one gave him nearly as much delight as the other—now stopping behind to tie the strings of the low-quartered dress shoe which he always wore, and which, whether by his fault or theirs, were always coming untied,—no one, we say, who met him thus when he was most himself, could have failed, especially if he had caught sight of his face—which

was that of a refined and more passionate Cromwell—to be struck with his appearance as a remarkable-looking man, but no one certainly would have taken him for a *schoolmaster*. Even gowned and in school, he was the governor, but he was not in the least degree in the world the conventional Don. His dignity, in fact, was the effect of real weight—always impressive, on occasion grand, but never ceasing to be simple and natural. It may be conceived how much influence this, being, as it was, the true figure of the man's great and powerful nature, would have upon boys, so easy to be caught by the imagination, so quick too, it may be said, to discover the deception if what attracts them be unreal.

In this point, then, of natural relation to the young, Arnold was pre-eminently qualified for his position as a schoolmaster; and it was through this, as we believe, that he did all the good which he did effect. In some other points he was less peculiarly fitted for the post. If his knowledge was great and rare on some subjects—history, in especial—and his grasp and boldness of thought, and the *reality* his mind gave to everything, were of invaluable influence, his scholarship was at one time defective, both in principle and detail, although in both these points it greatly improved. But, doubtless, his resources were ample, had he had the natural talent, or the acquired art, of communicating them in the best manner. This, however, he scarcely had. He cannot be said to have been a first-rate tutor. In fact, he had little or no idea of the art of teaching as we conceive it. He *heard lessons*, which has much the same relation to teaching, as saying prayers has to praying. It meant that he punished boys who did not know what they professed to have brought up; and he took care—no man was ever more conscientious—to have placed by himself or others what information he thought the lesson required before the form; and you took it in, if you were so minded, and could—or you lost it. It was your affair—his duty only was to punish you again if he found to-morrow, or on any future day, that you were still ignorant of it. But he wanted the art—and never, we believe, conceived of it—of lodging the knowledge in the boy's mind, either *malgré lui* (as the manner of some is), or by that excitement of the boy's own faculties, which makes his absorption of it an unconscious act.

This must not be interpreted to mean that he was a *bad* tutor. As tutors then went, or even as they go now, we may say, he was a good one; and while it could scarcely be said that his form, taken as a whole, was well taught, he yet succeeded in imparting something to all, and very much to some. But it was rather through his own liveliness and energy catching the boy's imagination, and impressing what he said, than through any skill of his, in preparing or adapting the information for his pupil's use.

He taught, in fact, as we must repeat, as a man who had not learned, or would not condescend to use, the *art* of teaching. But a clever boy could scarcely be under him without being stimulated to *think*—perhaps almost too much so; and a stupid boy could not be idle. In fact, there could be no real idleness, though the labour need not be well directed, where he was master. His eye was quick, and his hand heavy. When we say, his *hand*, however, we must guard ourselves against what would be an utterly incorrect idea of him, for he never condescended to *manual* violence, even with the lowest forms. His weapons, with his upper forms, were almost solely—for impositions were rare in the sixth—his eye and his tongue. Perhaps we could add his *mouth*, for few will forget the expression of his tightly compressed lip, and the projected lower jaw. But, though his satire was sometimes bitter, dignity always ruled supreme. He never forgot either the master or the gentleman.

But the point in which we regard Arnold as decidedly defective as a schoolmaster, was one which closely touches his greatness as a man. Arnold's majestic singleness was his chief characteristic. Like Wordsworth's cloud, his mind

“ Moved altogether if it moved at all.”

Moreover, it never moved except by genuine impulses from his own nature. Wordsworth himself was not more intensely individual. Now, while the elements of which Arnold's character was composed included perhaps all the noblest and finest which the range of human nature offers, and these in unusual strength and perfection, they were comparatively limited in number, and he had little or nothing of that sort of imagination which enables some men to live a large margin of life beyond that of their own idiosyncrasy. There are two kinds of men who succeed in making a great impression on the world. The one is he whose wide and deep insight into human nature places men as it were at his command, and, if he cannot remove the obstacles to his will, enables him at least to avoid them. He, like Homer's steersman—

Μῆτις . . .
Νῆα θεῶν ἰδύει.

The other, wanting this insight, making his way rather like the iceberg than the ship, mole ruit suâ; he bears down impediments, but it is at the expense of collision. It was to the latter class that Arnold belonged, and the incapacity of understanding other natures differently constituted from his own, was his great defect as a schoolmaster. A school of any size is a microcosm which will contain all the elements of human character, that are

subsequently to diversify the larger scene. It is essential that the man who is to train these young minds should not only be able to enter into these diversities, but should reconcile himself fairly to that wisdom which has ordained that such diversities should be permanent. Arnold fulfilled neither requisition—the former because he could not, the latter because he did not think of it. As far as his own constitution coincided with that of the boy, he sympathised with him, but no further. This alone secured that Arnold should be in more or less sympathetic relation with the best and highest natures with which he came into contact, but equally it left him outside a great part of the life which he desired to rule—not that he did not see the phenomena, for his observation was quick, but that he could not rightly interpret them. And again, as a natural result of this limitation, he had but one ideal for all boys, and that his own conception of the perfect man. The difference between boys, to which he submitted as a necessity, was only a difference of more or less; the boy approached nearer or remained further from that standard by which he measured all. He did not conceive that grand doctrine of equivalents which is the foundation of all true education. This was quite natural and unavoidable in him—himself a man of so few, and those such engrossing, sympathies—but so far as it acted it tended to diminish his efficiency as a schoolmaster.

It may be doubted whether in any situation of active life—unless it had been that of a military commander, for which he showed great capacity—Arnold's practical influence would not have suffered from this imperfect sympathy, and not least in that political sphere for which, in some respects, he was undoubtedly highly qualified.¹ In no sense of the term, better or worse, was Arnold "a man of the world." As we have indicated, he could not cordially reconcile himself to those differences of nature and character which the man of the world begins by recognising, but beyond this, that capacity of suiting himself to circumstances, which the latter, whether in the right or the wrong spirit must eminently possess, was almost an impossibility with Arnold. "*L'activité de son esprit,*" says Bourrienne of Napoleon, "*n'admettait aucun intervalle entre la conception et l'exécution de sa pensée.*" The same may almost be said of the rapidity with which Arnold's mind seized equally a mental or a moral conclusion. And having arrived at either, it became at once a subject of passion to him; especially in regard to that in which

¹ We believe Arnold to have been himself sensible of this. He once expressed to a friend that he was glad he had not been made a bishop, on the express ground that he should probably have been misunderstood, and not got on well with a new class of persons—"whereas, here," he said, "people have got pretty well used to me." It was as much as to say, that he knew his relations with others must depend more on their understanding him than on his understanding them.

he saw a thing of moral right or wrong involved—and few things interested him, but in relation to right and wrong—his own feeling was too strong and ardent to allow of even a momentary indifference or the affectation of it.¹

Arnold had, we may say, almost no sense of humour. If he laughed, it was as a boy himself laughs—at the mere superficial unfitness. He did not know the reflective laugh of the man who recognises beyond this the deeper fitness. But we have heard him say, that the longer he lived the less he saw the use of laughing. The reverse would perhaps be nearer the conclusion of the *philosophical* mind. This, however, was his feeling; and if this gravity—it would convey too harsh an impression if we said, austerity—added to his impressiveness with boys, it lost him on the other side more than it gained for him on this. With the boy, no doubt, his highest moments are the serious; and invaluable it may be for him to find himself, at a time of deeper feeling, in communion with a great soul like Arnold's. Yet what the boy wants more is a purifying, elevating, restraining influence upon the longer, lighter, interval. Deep calls to deep indeed, but he requires some one to teach his ear, and train his attention to catch the heavenly voices amid the din of daily work and play which fills the middle plain, or to distinguish them among the tumultuous echoes of grander, but equally mundane sounds which ring among the solitary heights of thought and passion where adolescence loves to lose itself. The influence which the mother exercises upon her children in the nursery, herself the leader of their play, and yet by her mere presence restraining, without their knowing it, the exuberance of their yet undisciplined spirits, would be represented in the perfect school, not by the *presence* indeed, but by the pervading *idea* of the true schoolmaster. Arnold scarcely fulfilled this part. He belonged only to our moments of deeper feeling. Anxious as he was to consecrate the things of daily life, and completely as he accomplished this for himself, he did not equally succeed for us, because he could not enter into the levity (using the word in no bad sense), and the passion for enjoyment which, whether we like it or no, we must admit to be characteristic of boyhood. And, doubt-

¹ We were once present on an occasion which sufficiently showed how far the moral dominated the political element in him. A friend, whose character he held in the highest reverence, and whose age and position enabled him to treat Arnold with a freedom which few people permitted themselves with him, was relating to him some political combination which he was conducting in support of views in which both were deeply interested. In the course of the conversation, he mentioned the assistance he derived from some individual known to hold religious opinions very different from theirs. "What!" said Arnold, in that hesitating voice in which he so generally addressed those, young or old, whose opinions he respected, "What! you don't mean that you would act with so and so?" "Act with Old Nick if he'll serve my turn!" was the reply of the politician; but the sadness of Arnold's face was sublime.

less, but that his deeper wisdom forbore to press where he felt the limitation of his real power, there would have arisen between him and us what is so constantly seen in religious families, where the heads, equally incapable of mastering the difference of character between themselves and their children, but less deeply sensible than he of the paramount value of sincerity, and the risk of inducing dissimulation or formality, enforce *ab extra* the manners and expressions which only became their own profound convictions. From this folly Arnold absolutely refrained, and greatly is he to be admired for his self-control.

The sum of our remarks on this head is expressed in stating our opinion that Arnold presided over Rugby rather as a governor than as a schoolmaster proper, and that the *education*, in the true sense which his pupils derived from him was rather, if we may so say, what they *took*—by contact with him and the circumstances under which his government placed them—than what *he gave*. There was room for the schoolmaster beneath him. Of his administration, regarded as a government, Mr Stanley, in his *Life*, gives an admirable account, and it would be but repetition to dwell upon it. In one respect only he was not altogether as successful as might have been wished, and as our friend Tom Brown's own sympathy with him would lead the public to suppose. He certainly did not manage well—especially in his earlier days—the animal element which constitutes one of the special difficulties of a school. The mass of the English world is not remarkably intellectual. A considerable capacity of observation, and a fair amount of reasoning power, is as much as is to be looked for in the majority of our countrymen, even in mature years. But the sound judgment which these are ultimately to develop is of later growth; and the ordinary subjects of study in the public schools—and more then than now—do not, at least as they are ordinarily handled, greatly interest the boy. Some dim sense of duty, with the more or less definite shadow of a grim necessity looking over its shoulder, is about as much as the lad of this type brings to his school tasks; and whatever civilizing influence Horace and Virgil may possess for those whose æsthetic sensibility is quick, it is not usually till he reaches the inspiring atmosphere of the House of Commons that the country gentleman awakes to their beauties. Meanwhile, the boy, in general a well-disposed animal enough—indeed as he is *now* seen—for the change within thirty years past is surprising in this respect—a very nice animal, is distinctively an animal, and whatever of character he may show will be of an animal kind. Of course, there are great dangers for himself, great difficulties to a schoolmaster in this position. If he is harmless, so long as, with Tom Brown, he takes out his force in pure athletics, the same exuberant life will have other tendencies also,

for which it is not so easy to provide a field. Here Arnold's governmental notions did mischief. An avowed hostility between a government and certain classes may be a political necessity. Such a relation is utterly anomalous between a schoolmaster and his pupils. Yet it existed, more or less distinctly pronounced, between Arnold and the animal party in all its phases, except the athletic, and the exception was very difficult to observe. Boys of this kind formed Arnold's "classes dangereuses;" and, of course, he did not—he could not—dissemble his distrust of them. This hostility was much more noticeable and more intelligible during his earlier period. Latterly, though not extinct, it was much less apparent, and indeed there was less of it, but for a good reason. Every arbitrary government must have its Cayenne. When a boy gave Arnold anxiety of this kind, he sent him away.

Much has been said on this great principle of Arnold's school government, and we shall conclude our remarks with a few words on the subject. We are ourselves disposed only to object to the freedom with which he used it, and this again referred to his fundamental error of acting as governor rather than schoolmaster. But that the schoolmaster must have this power we cannot question. His great responsibility is to regulate the moral temperature, so to speak, of the school, and to do this he must have the power of rejecting dangerous elements if occasion require. In a small school, a single boy of bad tendencies might so influence the general atmosphere, that it would be most unfair to the rest to expose them to it, and it might be legitimate *to exclude him without waiting for actual offence*. But, in proportion as the field becomes larger, so does the necessity for arbitrary interference lessen. Where many boys are collected, human characters will be found represented in their average proportions, and this is what is to be desired.

There is another observation to be made on this point. Arnold's chief reason for employing this practice so freely was, we apprehend, his fear of the animal propensities. But the force of the animal spirits is no criterion of the force of the animal propensities, and it was naturally only those youths, who, by their particular exuberance of life made themselves conspicuous in the class in question, who attracted Arnold's censorial eye. Now, in fact, such lads, though they will of course lie open to temptation, in virtue of their animal vigour, are usually those who are least disposed to any real vice. Their health is itself a guarantee against sensuality. Sensualism, both at school and in the world, is found to lie among the quieter natures. Their energy, on the other hand, is invaluable, if it be once enlisted in the service of good, and their general right feeling renders it particularly easy so to engage them, if only a field be found for

their activity. To our mind, Arnold probably eliminated some of the best elements of the school in this way. Why, was not Tom Brown himself for some time, if we rightly recollect, on the edge of the razor? Yet Tom Brown was potentially at his earlier period the same excellent fellow whom the public now knows and so cordially likes, and it was for the true schoolmaster to discern and realise him. And when we hear Arnold's own complaints in the later days of his monarchy—and they were never out of his mouth—of the want of strength of character and individuality in the school compared with earlier times (when the "antediluvians" still showed in some force), may we not read his own condemnation of the system of emasculation which he had so long followed? We conclude, therefore, that, while the power in question is a necessary one, Arnold mistook the principle which should govern its employment.

It would be ungrateful to close without taking some notice of the pleasant, and more than pleasant book, which has afforded us the opportunity of making these remarks. But there is the less need for dwelling upon a work which everybody has read, or means to read. Owing its first welcome, no doubt, to the interest attaching for so many to Rugby and Arnold's name, "Tom Brown" has won himself—we instinctively say *himself*, for it is the great proof of the merit of the book, that the author has almost as successfully imposed his hero's personality upon the reader as Defoe that of Robinson Crusoe—a cordial regard from all who can appreciate a "fine fellow," in the best sense of the word. As a book, the work has plenty of faults. Overflowing with geniality, and exhibiting high principles throughout, on the purely literary side vigorous and picturesque writing are to be set against a plan out of all proportion and a want of continuity, which severely tries a critic's good nature. Nevertheless, it answers its purpose in making us acquainted with Tom Brown himself, while it gives us a lively picture, as fair as can be expected, of the *old* days at Rugby,—for there has been change there, we apprehend, as everywhere else,—and traces an aspect of the great man on whom we have been commenting, which had scarcely been drawn before, but of which all who remember him will recognise the truthfulness, and none, whether they know him or not, deny the beauty. •

- ART. VI.—1. *The Kind-Book of Proverbs: comprising Ray's Collection, with large Additions.* By HENRY G. BOHN. London: Bohn.
2. *A Polyglot of Foreign Proverbs: comprising French, Italian, German, Dutch, Spanish, Portuguese, and Danish, with English Translations and a general Index.* By HENRY G. BOHN. London: Bohn.
3. *Laus from Heaven for Life on Earth. Illustrations of the Book of Proverbs.* By the Rev. WILLIAM ARNOT. First and Second Series. London: Nelson.
4. *The Proverbs of Solomon, Illustrated by Historical Parallels, from Drawings by John Gilbert, and with Introductory Remarks.* London: Nisbet.

"ONE man's wit and all men's wisdom,"—a definition extemporised by Lord John Russell, at Sir James Mackintosh's breakfast-table,¹ is the best description of a proverb with which we are acquainted. As terse as the "celebre dictum, scitâ quapiam novitate insigne" of Erasmus, or the "much matter decocted into few words" of Thomas Fuller, it comes more within our modern limits than Ray's "short sentence or phrase in common use, containing some trope, figure, homonymy, rhyme, or other novelty of expression;" whilst, over and above, it gives the rationale of this universal literature,—the origin and rise of the popular adage. For the gift of utterance does not always accompany the gift of understanding. Although there may be exceptional instances, like the merry monarch,

"Who never said a foolish thing,
And never did a wise one;"

we have no doubt that most people have got more wisdom in their heads than they have ever been able to put into their words. There are many who pass through life judiciously, usefully, honourably, who have never uttered one memorable saying. Mute sages, dumb philosophers, saints dwelling in silence, they let their light shine, and they manage their affairs with discretion, but they give forth no oracles. Hereafter they will be remembered, not for the good things they have said, but for the right deeds they have done. It will be their "works," not their words, which will "follow them."

Such practical men, however, are often quick in recognising their own principles of action when enunciated by others; and whether it be a forcible observation in a sermon, a pithy sentence in a play, or a happy hit in the harangue of a public speaker,

¹ Life of Mackintosh, vol. ii., p. 473.

they hail with delight a maxim, in which their own minds are so vividly reflected, and which exhibits so well the rationale of their own procedure. "That man speaks sense," is their instant response to the saying which gives a key to so many of their own actions, and the truth of which a life-time's experience enables them to countersign. "It is just what I myself have often thought," and not without a certain self-complacency, they treasure up the dictum, and produce from time to time its portable and much-comprehending philosophy.

Nevertheless, a maxim does not necessarily become a proverb. Many grubs never grow to butterflies; and a maxim is only a proverb in its caterpillar-stage—a candidate for a wider sphere and longer flight than most are destined to attain. And, in order to secure universal currency, it must meet a general want, and it must suit the popular taste.

There is many an apophthegm, of which the circulation is restricted by its subject. It may be just, it may be profound, it may be brilliant; but if it relates to matters of which the multitude never think, like a treatise on runes or on the higher mathematics, it must be content with an audience "fit, though few." Thus, nothing can be more to the purpose than the remarks of Chesterfield and La Rochefoucauld on good-breeding and deportment. "Grace is to the body what good sense is to the mind. "A man's own good-breeding is the best security against other people's ill-manners." "Good-breeding carries along with it a dignity that is respected by the most petulant. Ill-breeding invites and authorises the familiarity of the most timid." "Nothing so much prevents our being natural as the desire of appearing so." But, in beer-shops, there is no demand for Rhinish wines; and neither the shrewd insight, the deep philosophy, the pointed expression of such sayings, can obtain for them the privilege of "household words," in a community where grace and good-breeding are necessarily restricted to a small minority.

In the same way, many of Napoleon's deliverances on the sciences of war and government, have become adages with statesmen and soldiers, but it would require a very military or democratic community, in order to promote them to the rank of proverbs. They are "the wit of one," but they are only the "wisdom" of a certain class.

Even so, many a sententious saying is not adopted by the multitude, because its form or flavour does not suit the general taste. For example, in a country like our own, we could not expect that a rapartee, however brilliant, would naturalise itself in work-shops and cottages, if the point lay in some classical allusion, or literary parody, or recondite æsthetic principle; as was the case with many of Canning's happiest thrusts and par-

ries in the days of witty Parliaments. And different nations have their different humours. A Frenchman loves a sparkling *mot*, or an aphorism effervescing with "glories," and "great souls," and "eternities;" whilst a true-born Englishman disdains such sentimental stuff: and the rich grave irony which shakes the sides of a Spanish don, would only draw forth the scowl of an Aberdeensman, or the dirk of a Highlander. Hence, in every community, it is with "poor Richard," and his brethren among the people, that most proverbs have originated; and, in as far as any of them may have had a literary source, we should look for their first promulgation not to Hooker, and Milton, and Sir Thomas Brown, and the souls sublime, who were more cosmopolite than British, but to Latimer, and Shakspeare, and Bunyan, who never spoke to hearts of oak unless with an English tongue. Fine speeches may be quoted, but they are only the standing homely saws of Anglo-Saxon parentage which keep their ground, and are transmitted from age to age.

Sometimes, however, a maxim of the select circle finds its way into general use through the medium of some master-spirit, who, with access to good society, commands the attention of the multitude. A Benjamin Franklin, or a William Cobbett, reads the best authors, and then, in the plainest English, chats from the platform or the press on all sorts of subjects, and, with a plagiarism almost unavoidable, he gives forth, so as not to be distinguished from his own originalities, the choice thoughts and happy illustrations which rush upon his memory from all the fields of literature. As repeated by such a translator, the good saying is divested of the obscure allusion or the pedantic language, which restricted it to a peculiar coterie, and the quip of Herbert, or the conceit of Jeremy Taylor, is henceforth on the fair way to become a proverb of the people.

As far as we are acquainted with the proverbs of any modern nation, the bulk of them is older than its printed literature; and the number, we suspect, is very small which can be traced up to a definite authorship. But, at this moment, there are many which are working their way into general currency, and after they have been somewhat shortened or new-shapen, we shall find among our every-day axioms,—

"The evil, that men do, lives after them;
The good is oft interred with their bones."

"Solitude is sometimes best society,
And short retirement urges sweet return."

"Trifles, light as air,
Are to the jealous confirmation strong
As proofs of Holy Writ."

“The rank is but the guinea stamp,
A man's a man for a' that;” †

as well as Gray's "Full many a gem," and Pope's "Ruling Passion strong in death," and Beattie's "Ah! who can tell how hard it is to climb!" And, we may add, that as we become more cultivated, and as a finer sense diffuses itself throughout the community, many a choice saying, now locked up in printed books, or only current amongst the well-informed, will pass into proverbial frequency: such as the remark of Coleridge, "To most men experience is like the stern lights of a ship, which illumine only the track it has passed," and many of those vivid sentences in which, like sparks from a thunderbolt, Napoleon flashed out his own intensity: "The heart may be torn to pieces, whilst the soul stands unshaken." "It is the good cause, not the stake, which makes the martyr." "Usually the truest wisdom is a resolute determination." "On unity of action depends the success of means." "The man who least of all belongs to himself, is the man whom the events of Providence call to the government of nations." "Every hour of time lost is a chance of misfortune for the future," "There are calumnies by which innocence itself is confounded."¹

Occasionally the proverb carries something *in gremio*, which so far fixes its date. The Spanish proverb, "A great lance-thrust to a dead Moor," sends us back to the conflicts betwixt Christian and Saracen, and is evidently contemporary with "The Jew ruins himself with passovers, the Moor with wedding feasts, and the Christian with lawsuits." Such sayings, as "Big churches, little saints,"—"God's friend, the priest's foe,"—"Monks and mice seldom take leave without mischief,"—"Touch a friar, and all crows flutter as far as Rome,"—and others, in which the German vocabulary abounds, would point to the dawn of Reformation, when people were beginning to espy rents in the rochet and rust on the mitre. English history has told us the origin of the adage which is read on the scroll of the Garter; and of more than one proverb, that great record of inventions and antiquities, the Bible, has preserved to us the age and the first occasion. "Is Saul also among the prophets?" is, of course, older than the days of Solomon: and David quotes as already a time-honoured saying—"a proverb of the ancients,"—"Wicked-

¹ "Le cœur peut être déchiré, et l'âme rester inébranable." "C'est la cause qui fait le martyre, et non la mort." "La vraie sagesse, en général, est dans une détermination énergique." "De l'unité d'action, dépend le succès des moyens." "Le mortel que les évènements et les décrets éternels appellent au gouvernement des nations, est sans contredit, l'homme qui s'appartient le moins." "Chaque heure de tems perdue, est un chance de malheur pour l'avenir." "Il est des calomnies contre lesquelles l'innocence même perd courage."

ness proceedeth from the wicked." As far back as the age of Moses, it had become proverbial to compare a "mighty hunter" to Nimrod; and a proverb corresponding to "Man's extremity is God's opportunity," is immortalised in connection with Mount Moriah, and the crowning act of Abraham's faith.¹

Like primeval poems, the first proverbs would be abundantly simple. A certain trimness of terseness distinguished some saying, as in the case of the above quoted, "Wickedness proceedeth from the wicked;" and coming neatly through the lips and falling nicely on the ear, it grew into a favourite phrase, and was so oft reiterated that at last it could not be forgotten. But as by and by men grew more ingenious or refined, mere neatness was not pleasing enough. The pillar required, to be fluted, the rectangular plinth was exchanged for a florid capital, the single verse was replaced by an elaborate stanza, and the proverb suggested improvement. A humourist stuck a feather in its cap or added a sting to its tail, by way of making it more arresting or more emphatic; or a poet turned it into metaphor, and fitted it with metre, so as to make it more convenient to the memory. "Know thyself," was the heaven-descended simplicity of that oracle which faced the devotee as he approached the Delphic shrine, and it may be accepted as the fundamental precept of the old Greek ethics: but "Know thyself" grew trite, and from Æsop, with his fault-basket slung behind the back, visible to all save the owner, down to the Ayrshire bard—

"O wad some power the giftie gi'e us,
To see oursel's as others see us,"

moralists have striven to furbish up the old familiar maxim, and bring out its meaning anew. *Μηδὲν ἄγαν*, "Ne quid nimis," "Exceed in nothing," is an advice so good, that it is quite a controversy, who first gave it? Diogenes Laertius claims it for Pythagoras. Aristotle assigns it to Bias, and something very like it can be detected in Homer and Hesiod, not to say Euripides. But plain *μηδὲν ἄγαν* began to lose its force: so Alpheus turned it into a punning epigram, and said, "how exceedingly delighted he was with this caveat against exceeding:"

Τὸ μηδὲν γὰρ ἄγαν, ἄγαν με τέρπει:

and Horace needs must say,

"Est modus in rebus:—

Virtus est medium vitiorum utrumque redactum:²

and so on it went, till now every nation has its own way of saying, "Stop in time." "Too keen an edge does not cut," say

¹ 1 Samuel x. 12; xxiv. 13. Genesis xxii. 14: x. 9.

² See the "Adagia" of Erasmus and others, forming a dense and inexhaustible folio, to our taste much more entertaining than another boundless and miscellaneous book, Burton's "Anatomy of Melancholy."

the French, "Too fine a point does not pierce. "Too many sacks are the death of the ass," cry the Germans; and "Too much wax burns the church," re-echo the Portuguese. "Too many sailors sink the ship," shout the boatmen on the Nile, whilst the English captain translates it, "Too many cooks spoil the broth," and the Scotch steward or stoker replies, "O'er mony greeves but hinder the wark." But by this time our Scotch readers are exclaiming, "O'er meikle water drooned the miller. Eneuch's as guid as a feast. *So, if you please, no more of *Ne quid nimis*."

Like our Edward the Third and his "Honi soit qui mal y pense," the Arabs have a historical origin for many of their proverbial sayings.—"God has His hosts, amongst them honey," is said to have been first used when the emperor Moawiah heard that his enemy Ashtar was killed by eating honey made from poisonous herbs; and, "He is fond of championship who takes locusts under his protection," commemorates Modleg Ben Sowaid, a plucky chieftain, who carried the law of hospitality so far, that, when a flight of locusts alighted on his territories, and some neighbouring tribe was tampering with them, this Quixote of the desert drove off the invaders, and saved the locusts.

To an ethnologist, or a student of human nature, there can be no materials more valuable than the proverbs of a people. They are its most genuine cardiphonia—the confidential communings of the nation in the unreserve of its own homestead; the deliverance of the collective wisdom on all the subjects which engross its thoughts and form the theme of its most frequent discussion. In authorship there may be idiosyncrasy. Byron may be no true type of the Anglo-Saxon, nor Erasmus of the Hollander; but neither Englishmen nor Dutchmen can repudiate their proverbs. These are the nation's own composition—its autobiography—what Augustine would have called its confessions and retractations. Before a maxim could become a proverb, it had to pass the ordeal of universal suffrage; and, without millions of votes in its favour, it could never have been installed; and now that it has reached this rank, it is the accredited representative of its constituents; and as long as it carries their commission, we are entitled to regard it as their exponent. With this, the People's Own Book, in our hand, we cannot fail to perceive the native servility of the Hindoo, the self-possessed worldliness and mere materialism of the Chinaman, the gorgeoussness of the Persian, the pensive enthusiasm and fundamental religiousness of the Slavonian, the high-souled chivalry of the Spaniard, the sly vindictiveness of the Italian, the gaiety of the Frenchman, the thrift and caution of the Scot.

Nor is it merely revelations of principle which these proverbs afford, but they give us every race in its humour. According

as the bee feeds on the thyme of Hymettus, or the heather of the Grampians, the honey is differently flavoured ; and even so, the wisdom hoarded in these ancient hives has an aroma characteristic of the various regions where it has been gathered. The basis, or essential principle, may be the same, but the gust or bouquet differs according to the national genius. Take the following group :—

Since I wronged you, I have never liked you.

The day I did not sweep the house, there came to it one I did not expect.

Never speak of a rope in the house of a man who was hanged.

If you want to beat a dog, say he ate your iron.

The gallows was made for the unlucky.

To be a merchant, the art consists more in getting paid than in making sales.

A fool, unless he know Latin, is never a great fool.

If the rings are lost, here are the fingers still.

He who wants to be rich in a year, comes to the gallows in half a year.

A gentleman would rather have his garments rent than mended.

They took away the mirror from me, because I was ugly, and gave it to the blind woman.

In these “refranes” of Arragon and Castile, the humour is subtle, and the satire, where satire occurs, is very delicate, and full of quiet dignity. The first two examples and the last, are an expedient of frequent occurrence in the proverbs of Spain. In order not to give offence, or by way of “an excellent oil which will not break the head,” the Mentor admonishes his friend by reproving himself, or confessing his own stupidity. Broader in their mirth, and more caustic in their tone, is the following cluster :—

A blate cat maks a proud mouse.

Better a toom house than an ill tenant.

Jouk and let the jaw gang by.

Mony ane speirs the gate he kens fu’ weel.

The tod ne’er sped better than when he gaed his ain errand.

‘A wilfu’ man should be unco wise.

He that has a meikle nose thinks ilk ane speaks o’t.

He that teaches himsel’ has a fool for his maister.

He [the miser] wad rake hell for a bodle.

It is an ill cause that the lawyer thinks shame o’.

Lippen to me, but look to yoursel’.

“Mair whistle than woo,” as the souter said when shearing the soo.

Ye gae far about seeking the nearest.
Ye'll na sell your hen in a rainy day.
Ye'll mend when ye grow better.
Ye're nao chicken for a your cheepin'.
Ye wad do little for God if the deil were deid.

The reader will not fail to contrast the frank directness of the "ye"—the German "Du"—in the last specimens, with the self-accusing "I" of the courtly Spaniard. In all the samples there is perhaps no one more characteristic, than "Lippen to me, but look to yoursel'." Cromwell must surely have heard it before he gave his famous watchword, "Trust in Providence and keep your powder dry."

The natural productions, and the usages of countries, are inevitably mixed up with their proverbs. "Never trust to a well in front," is an excellent Bechuana proverb, which we acquired the other day from Dr Livingstone,¹ obviously the proverb of travellers through arid regions. So far akin to it are the Arabic, "The last drinks least;" and, "If water is present for ablution, the use of sand is discontinued,"—alluding to the mock ablutions in sand which the Mecca pilgrims go through during those portions of the march when there is too little water for washing. "The over-hasty traveller neither saves his cattle, nor makes out the journey," is a Bedouin adage; as also, "Fairer than a white egg in a green meadow," implying, "entertainment for man and beast,"—food and repose in charming combination. Thesea-faring habits, and the amphibious territory of the Dutch, come out in their sayings,—"The best pilots are ashore;" "Pull gently at a weak rope;" "After ebb comes flood, and with prosperity come friends;" "Cover the pot—an eel is in it;" "Large fish leap out of the kettle;" "Coupled sheep drown one another;" "The first in the boat has the choice of oars;" "Still water stinks;" "A wreck on shore is a beacon at sea." The proverbs of Arabia abound in lions, horses, and camels; those of Spain and Italy, in asses; those of our own country, in foxes, dogs, and cats; and, judging by this rule, the animal which has laid the

¹ Dr Livingstone had made a collection of Bechuana proverbs, as well as of the inaugural odes which the young natives recite on reaching man's estate, and being formally admitted to the privileges of the tribe. These last were philological curiosities, containing many words not now in use; but they all perished in that ruthless attack made on the missionary's dwelling by the Transvaal boers, of which he has given an account, so mild and modified, in his *Travels*, page 39. Another Bechuana proverb with which the Doctor supplied us, was, "You will not go into those coals a second time;" equivalent to, "A burnt child dreads the fire;" and yet another, "You cannot take the humble cow by the horns," corresponding to some saying of our own about the nether garments of the Highlander. Mr Moffat has also given, in his "Missionary Researches," a very good proverb, the counterpart to Solomon's "lion in the streets,"—"The month of seed-time is the season of headaches."

most powerful hold on the Frenchman's imagination, is the wolf. "The lion's nose is well defended," is a very deep remark of some Assyrian explorer. "Let the night be your camel," is the ripe result of the experience of some white-bearded cattle-lifter among the sons of Ishmael; and, no doubt, Abd-el-Kader was well acquainted with the simile, "More beautiful than a black horse with white feet;" as well as that maxim, "The eye of a good horse serves for a tooth;" for as long as the eye flashes, there is no need to look for age-marks in the mouth. "If one, two, three, say you are an ass, put on a tail," is Spanish advice; and "A braying ass eats little hay," is Italian experience. And not to multiply our own canine, feline, and vulpine, adages, we may give a specimen of Gallic lycanthropy, "Wolves do not eat each other." This must be the effect of French civilization, for in Russia they have the reputation of being cannibals; and, indeed, our neighbours seem to have discovered that this panegyric was precipitate, for they themselves have modified the proverb into, "Provender is scarce when the wolf eats his comrade." But there can be no doubt about the following: "The death of the wolf is the health of the sheep;" "When the wolf is dead, all the dogs give him a bite;" "Talk of the wolf, and you will see his tail;" "He who kennels with wolves must howl;" "Counted sheep are eaten by the wolf;" "The wolf is not so big as he is reported;" and, "The wolf will die in his skin." But we do not remember that the French have got the adage of their more religious neighbours in the Peninsula, "The wolf does that in the course of the week which prevents him from coming to church on Sunday."

As proverbs are meant to be portable, it is essential that they should be packed up in few words, and it is very desirable that they should assume the shape most convenient for the memory. Hence, in every language, a large number have taken the form of poetry; and, in the languages of Europe, they have extensively availed themselves of the mnemonic aids supplied by rhyme and alliteration. "A cat may look at a king;" "He that comes unca'd sits unserved;" "Out of debt out of danger;" All is not gold that glitters;" "Time tries a'"; are instances where much of the pith depends on that sort of initial rhyme so native to our tongue and so agreeable to Scotch and English ears. Of rhymed endings the examples are equally abundant. In English, we have, "Safe bind safe find;" "A friend in need is a friend indeed;" "When the cat's away the mice will play;" "Early to bed and early to rise, is the way to be healthy, wealthy, and wise;" "He who would thrive must rise at five, he who has thriven may sleep till seven;" and a multitude besides, but not more than can be paralleled in Dutch, Spanish, and German. At first sight, one

would be apt to suppose that the language which gives a proverb in rhyme, is its mother tongue, and that the others possess it by translation. But this does not always hold. We say, "Birds of a feather flock together," but the Book of Ecclesiasticus (xxvii. 9) has said two thousand years ago, "The birds will resort unto their like." The Dutch say, "Handelt gii pek, gii krijgjt een vlek;" but, in so saying, they have only versified Ecclesiasticus xiii. 1, "He that toucheth pitch shall be defiled therewith." The Spaniards say, "No hay mejor bocado que el hurtado;" but this is only their rendering of, "Stolen waters are sweet, and bread eaten in secret is pleasant," Proverbs ix. 17. Besides, many proverbs have their metrical equivalents in many tongues, and it is hard to say which is the oldest. In virtue of its terseness, we are disposed to think that the English, "What cannot be cured must be endured," is older than the German, "Was man nicht kann meiden, soll man willig leiden;" but, who shall decide the question of priority as between the English, "Man proposes, God disposes;" the French, "L'homme propose et Dieu dispose;" the German, "Der mensch denkt's, Gott lenkt's;" the Dutch, "De mensch wikt, maar God beschikt;" the Danish, "Mennesket spaaer, Gud raa'er;" the Spanish, "La gente pone, y Dios dispone?"

George Herbert, Thomas Fuller, Ray the naturalist, and several of our wisest men, have given more or less attention to the proverbs of the people; and, acting on a suggestion of Dr Trench, the pages of "Notes and Queries" have treasured up many local adages which were in danger of being lost; and the high price given for collections in our own or foreign languages, is a sufficient proof that the study of the subject is rising in general favour. To this nothing has latterly contributed so much, at least in Britain, as the delightful work of the Dean of Westminster,¹ where, like a mosaic on sandal-wood, or rather, "like apples of gold in baskets of silver," the gems supplied by an extensive erudition, acquire new beauty from the deep wisdom, the ingenious criticism, and the charming instruction in which the collector has set them.

But upwards of a hundred years have passed since proverbs were recognised by our authors and orators. Sermons of the Reformation period are full of them. Latimer often clinched his argument with a text from this oral Bible of the multitude; and Jewell mingled them with aphorisms almost as good of his own invention. With the ready wit of these "wise saws," John Knox had his quiver richly furnished. "Ding doon the nests and the rooks will flee awa'," is said to have been fatal to the

¹ On the Lessons in Proverbs. By R. C. Trench, B.D. London: Parker.

cathedral of St Andrew's; and "Better that women should greet nor bearded men," was the apology with which the author of "The Monstrous Regiment" consoled himself for having drawn the tears from Mary's eyes; nor would he fail to use such artillery in his sermons. They held their place all through the following century. "Better bow than break," "Even reckoning makes lasting friends;" and similar extracts from the Book of Common Sense, enrich the racy pages of South, and their presence is often perceptible in the allusions as well as direct quotations of Barrow. There is nothing of which Jeremy Taylor does not contain something, consequently his works are spiced over with a good sprinkling of proverbs. Unlike South, who dealt chiefly in familiar condiments of native growth, most of Taylor's are exotic. Many of them are French and Italian. But the preachers who followed Tillotson, were fine gentlemen, and would have deemed it an indication of low breeding to introduce into their elegant discourses the wisdom of the high-ways and hedges. But Matthew Henry abounds in proverbs. It is likely that they flourished in the cheerful circle at Broad Oak, and that to the memory of the only son, their associations, far from being vulgar, were only kindly and happy. And, as we turn over the leaves of his "Exposition," so rich in sanctified wisdom, and through which there reigns such an atmosphere of perpetual summer, we cannot fail to recognise the frequent recurrence of these fruitful sayings, as one great element of our instruction and enjoyment. "When the wine is in the wit is out;" "The wicked cut their throats with their own tongues;" "Drive the nail that will go, and draw out that which goes amiss;" "Forecast is as good as work;" "To keep doing fairly and softly goes far in a day;" "Many a beau becomes a beggar;" "God blesseth the giving hand, and makes it a getting hand;" and similar sentences, flashing out from every page—some of them the old current coin of the realm, and others newly struck in the Henrican mint—surprise the reader by their vividness, and enrich him by their sterling solidity. Like steel in a fountain, the sparkle pleases the eye, and the tonic strengthens the heart.

At this moment we do not recollect having ever heard a proverb quoted in the pulpit—those of Scripture excepted, and even them but rarely. In one respect this is well. So far as it is the object of sanctuary services to edify the devout, and raise to an elevation still higher minds already spiritual, it is hardly possible to keep at too great a distance all that savours of this poor world—its shabby ways, and its low concerns. But this is not the only end of pulpit ministrations. Most of the sermons to which it has been our lot to listen, have been addressed to those

that are "without," rather than to those that are "within." The preacher evidently assumed that quite as many of his hearers were careless or unconverted as Christian; and with this assumption, we have sometimes thought that the object of the earnest speaker might have been all the better gained by an occasional descent to their own level—by speaking to them not in theological phraseology, but in the vernacular language of the county, and by drawing facts and illustrations, not so much from a region which, alas! is to the unbeliever little more than a Utopia, but from objects which their own eyes have seen and their own hands have handled; as well as by founding arguments or inferences, not on propositions which they dimly comprehend, but on premises which they themselves concede. In such a case, where, for the moment, the preacher merges the pastor in the evangelist or missionary, he could not find better precedents than the addresses delivered long ago on the hills of Galilee and in Roman court-houses; and where, from accepted axioms and experiences of their own, stepping-stones were constructed to aid doubters or disbelievers in their passage over to the realms of faith. Happily and wonderfully, counterparts to the things unseen are on every side of us,—at our feet and in our hands; and a wise steward will, from time to time, bring out of his treasure new examples; and no less happily, traces of the Divine autograph still remain on the ruined tables of man's heart,¹ and (no doubt mingled with much error) these fragments of primeval ethics float about in the proverbs of all nations; and, whether expressly quoted or indirectly indicated, few proofs should be more cogent than the coincidence of the voice from heaven with the still small voice within. The case should be very clear when the light of conscience only confirms what the light of revelation first pointed out; and it is not easy for the self-condemned judge to escape, when the parable reaches its moral, and discloses, "Thou art the man!"

Many of our readers are acquainted with those maxims which lie at the foundation of our common law, and which are, in fact, an oral or proverbial code; and any one who wishes to master the philosophy of our subject, and ascertain how profound and pervasive in all communities is this sort of sententious jurisprudence, cannot do better than study some treatise on the sources of our Teutonic legislation.² In so doing, like Moliere's hero, who had spoken prose all his life without knowing it, he will be delighted to find to how much legal wisdom he has been giving utterance every time he said, "The last out closes the door." In the adage, "The will is the soul of the work," he will find the reason

¹ Romans ii. 15.

² As, for example, Eisenhart's "*Grundsätzen des Deutschen Rechts in Sprichworten.*" Leipzig. 1823.

why, in prosecutions for libel or murder, all the evidence or argument often bears on the animus—the malice prepense. Every lady who bespeaks costly jewels or dresses, and orders the bill to be sent to her husband, will be happy to learn, that “Whosoever owns the head wags the beard;” but the boy, whose ripe redstreaks have dropped on the wrong side of the fence,—the sportsman whose covey has migrated to his neighbour’s preserve, knows to his sorrow, “All belongs to your neighbour which falls into his garden.” The pleasant old times have passed away, when the serfs of the abbey or the sacristans of the cathedral, could claim ecclesiastical exemption, and say, “It is good to dwell under the crooked staff,”—the crosier, to wit; but, we believe, that the maxim, “Whoever has the church has also the churchyard,” is still so far valid, that before becoming mutton the minister’s sheep are entitled to retire amongst the tombs of his parishioners, and ruminate there for a season. “When the feet are bound, the tongue runs fastest,” suggests a hope of extrication to gentlemen who have signed deeds with the pistol at their ear, as well as to heiresses who have conveyed away their fortune under ghostly intimidation in a cloister; but, to the unfortunate legatee who has entered probate to a bankrupt’s will, the doctrine is not so comfortable, “Whoever inherits a farthing must pay a dollar.” At the seaside, people constantly leave on the dry beach or the benches, books, telescopes, parasols or brooches, but never find them there when they return. This evidently arises from an erroneous notion about tresor-trove—or from the Scandinavian theory of “jetsom and flotsam” having supplanted the older Saxon and Hebrew rule, “Thou shalt not steal.” In such places it might therefore be well to revert to first principles, and by way of rubric to the eighth commandment, write up in Gothic letters, and leave it as a mediæval mystery, in which case it is sure to be read, marked, learned, and inwardly digested,—“*Ein Fund verhohlen, ist so gut als gestohlen.*”

Speaking of inscriptions and the middle ages, we are reminded of another use to which adages or moral maxims were once applied, and for which they are still available. St Augustine had inscribed on his dining-table the couplet from Horace:—

“Quisquis amat dictis absentem rodere famam
Hanc mensam indignam noverit esse sibi :”

thus “Englished,” by the author of “the Holy State—

“He that doth love on absent friends to jeer,
May hence depart, no room is for him here.”

To the present day the Jews fasten, but not very conspicuously, on their door-posts, a parchment scroll containing Deuteronomy vi. 5-9, and on the lintel of many a Christian building, sacred and

civil, ancient and comparatively modern, is some suggestive motto. On the Geraldine tower at Seville, it is, "*Nomen Domini fortissima turris*;" and on the innermost of the seven gates of the fortress at Rhodes, erected by the knights of St John, it was, "*Nisi Dominus custodierit, frustra vigilat qui custodit*," a sentence with which, in its abbreviated form, "*Nisi Dominus frustra*," all Londoners are sufficiently familiar. On the New Royal Exchange, in large letters and honest English, we read, "The earth is the Lord's, and the fulness thereof;" an inscription for the selection of which we are indebted to the good taste and good feeling of the Prince Consort. The hospitable portals of Montacute House, Somerset, proclaim

"Through this wide-opening gate,
None come too soon, none go too late."

And on Sudbury House, Derbyshire, is the devout acknowledgment,—"*Omne bonum Dei donum*." Sometimes a pun lurks in the legend. Thus, under a stone pansy at Beauvais, we read,—"*Plus penser que dire*;" on the parsonage at Barnard Castle, Yorkshire, in allusion to the family name Dugard,—"*Ce que Dieu garde, est bien gardé*;" and on the manse of St Martin's, in Perthshire,—"*Nulli certa domus*."¹ No doubt, in very pious or very virtuous mottoes, there may be danger of Pharisaism: As in the case of the Athenian Pharisee, who had written on his door, "Let none enter here but honest men," prompting the mischievous Diogenes to inquire of the porter,—"*Pray, sir, does your master come in by the window?*" But, unless we make up our minds to run this risk, we must give up the building of churches and hospitals, as well as the writing of mottoes upon them; and we confess a great respect for the courage with which these old worthies hung out their colours, and carved on the chief stone, such words as may still be read here and there throughout the Cowgate or the Canongate.² And, if we may speak our own experience, an apposite quotation, or a significant motto, is "a nail fastened in a sure place." Like a name beneath a picture, or like an old acquaintance suddenly encountered in the apartments of some show-place, the one lights up the other, and the two are henceforward plea-

¹ The above examples we owe to the matchless and still growing *collectanea* of "Notes and Queries."

² Of these a friend has copied down the following:—Over 121, Cowgate, "O magnific the Lord with me, and let us exalt His name together." On 137, Cowgate, apparently an old Tailors' Hall,

"Almighty God, who founded, built, & cround

This work, with blessings make it to abound."

On 269, Cowgate,—"*All my trist is in ye Lord*." On 242, Cowgate,—"*Be mercyfull to me, O God*. 1574." On John Knox's house, in the Canongate,—"*Lufe God abufe al, and yi nychtbour as yiself*." We would urge our kind and accomplished correspondent to complete his collection, and send it to some appropriate receptacle.

santly linked together. We seldom read the verse, "Lord, I have loved the habitation of Thy house, and the place where Thine honour dwelleth," without reverting to the gate-way of an Episcopal chapel near Fort William, where these words preached to us a quiet sermon on the eve of a July Sabbath, twenty years ago; and the pleasant little town of Kœnigswinter beside the Drachenfels, always calls up a Luther-like saying, which we read long ago on one of its old houses,—*"Er wohl gebaut wer Gott vertraut,"* "Well builds he who trusts in Thee." Sauntering through a sort of mosque in the gardens of Schweitzingen, near Heidelberg, we still remember how our fancy was taken with two texts from the Koran, inscribed on the dome,—*"Get of gold as much as you need, of wisdom all that you can:"* "A fool's heart is in his mouth, a wise man's tongue is in his heart;" and any of our friends who go to see the Kaisersaal at Frankfort, will probably retain the effigies of its emperors all the longer, if they mark down on the spot, and in connection with their history, some of the well-selected mottoes, such as that under Henry IV.—*"Multi multa sciunt, se autem nemo;"* or that on his hapless successor,—*"Miser qui mortem appetit, miserior qui timet;"* or that on Conrad III.—*"Pauca cum aliis, multa tecum loquere;"* or that on Frederick I.—*"Præstat uni probo quam mille improbis placere."* Thanks to heraldry, a few good maxims, as well as some more dubious, are still inscribed on signet rings, on carriage doors, and silver spoons; nor is it taking too literally the sure word of prophecy, to hope for a time when, on horse-trappings and table-equipage, shall be read watchwords of piety and avowals of personal devotion.¹

To a mode of instruction so universally acceptable, Divine wisdom has graciously condescended in giving the Volume of Inspiration; and we hail every token of attention re-awakening to this portion of Holy Writ, such as indicated in two of the works placed at the head of the present article.

To many of our readers Mr Arnot is well known as the biographer of James Halley, and as a champion who, against "Scotia's scaith," has warred a good warfare, and to many he is still better known as one of the most popular preachers in our western metropolis; and we say enough, nor do we feel that we

¹ "In that day shall there be upon the bells of the horses—*HOLINESS UNTO THE LORD.* . . . yea, every pot in Jerusalem and in Judah shall be holiness unto the Lord of Hosts."—*Zech. xiv. 20, 21.* The country in which the system of inscriptions has been carried the greatest length of any which we know, is Holland. We have in our possession a curious collection of "*Koddige en ernstige Opschriften,*" published at Amsterdam in 1698, and extending to four volumes. The inscriptions have been copied chiefly from house-fronts, signboards, windows, etc., and although many of them are mere trash, and some of them are coarse and vulgar, not a few are clever, and all are interesting, as the memorials of an old custom not yet entirely obsolete.

are saying too much, when we say that probably the book of Proverbs never attracted to itself a more appropriate commentator. In virtue of his scholarship, abundantly capable of textual criticism, his intentness on practical results has induced him to omit all subsidiary discussion, and has constrained him to plunge at once into the pith and marrow of his theme. There he is pre-eminently at home. With deep insight to character and motive, he has a singular talent for unearthing hypocrisy and driving self-deception from its refuges of lies; but this power he exerts, not as a dramatist or a delincator of morbid mental anatomy, in order to create in his audience amusement or terror, but as a prophet and a preacher of righteousness, in order to force men out into God's day-light, and so shut them up to the truth as it is in Jesus. Indeed, faithfulness is one of the noblest characteristics of the book. There is no disposition to blink existing evils, and descant on those respectable sins, which it is almost religious-looking to confess, and of which it is so easy to repent; but, as occasion comes, he grapples with sensuality, sottishness, gluttony; with all the forms of roguery, finesse, and fraud; with the harshness which, in its haste to be rich, tramples on the poor; and with the cowardly heartlessness which, in warding off the shafts of misfortune, would make a shield of the orphan or widow. At the same time, it is faithfulness without a vestige of passion or spleen; the faithfulness of a philanthropist, labouring for men's good; the faithfulness of an ambassador, loyal to his Lord; and it is relieved by a still larger amount of encouraging motive and animating appeal. Indeed, this is the author's great advantage for his task; he not only sets before us the beautiful ideal, but he puts us on the way to copy it with every hope of success. We have here ethics evangelised; and, if we are occasionally reminded of Moses and Elias, it is Moses and Elias encircled with the glory of Jesus, and talking of "the decease at Jerusalem;" and the tone of the book is as cheerful and kind as its spirit is manly and lofty. When we add, that it is a manual well-nigh complete of Christian morals; that every page bears the impress of a sound mind, judicious amidst its originality, and reverential notwithstanding its independence; that every here and there a picture of bold outline and startling power sheds over the theme a dazzling illumination; and, finally, that from the surcharged solution of precious thought with which every page runs over, there are constantly given off, like crystals fully formed, memorable adage and brilliant aphorism—we may congratulate Glasgow in that any of its pulpits should have such an occupant, and our own end of the island, in that it should have contributed to the Christian community an "every-day book," so attractive and opportune.

The illustrated edition of Proverbs is what our French neighbours call "a book of luxury." The text of the authorised version is printed on a new modification of the "paragraph" principle, so as to bring strikingly out the poetical structure of the several portions, and in that charming typography which throws light upon the text. But the great attraction is the rendering which Mr Gilbert has given to some of the more remarkable passages, in a series of drawings as exquisite as any which ever passed from under that cunning and well-practised pencil. The lesson of a story—of a life or a single adventure—may often be very well expressed by a proverb; and the successive stages of that life or that incident may very well be represented by a succession of graven or depicted groups, where the last of the series lets out the plot or the moral. But to put an entire proverb into a single picture, is in some respects the same sort of achievement as it would be to condense the five acts of a play into a single scene, or represent in one view the wolf with her nurslings, the building of Rome, and the apotheosis of Romulus. Mr Gilbert has, doubtless, felt this difficulty. Unlike Hogarth or Cruikshank, whose pictorial proverbs require a succession of four, six, or eight drawings to tell their tale, he has been restricted to a single tableau for each illustration. But by choosing well-known narratives, and by fixing on the critical moment in each history, as also by subjoining the appropriate proverb, the artist's genius has triumphed over the difficulty. Indeed, most of the pictures speak for themselves. Without any explanatory letter-press, no one can have any difficulty in detecting "royal beneficence" in the stranger, with a star on his breast, entering the cottage, to which he has been guided by the tattered starving children; and who that looks at the blood-freezing picture, where a guilty conscience is arrested in digging something like a grave inside the tent, and shades the lamp in order to look out into the darkness, can forbear from thinking, "Be sure your sin will find you out;" "the wicked flee when no man pursueth?"—or in that crowded group, where two processions meet—a prince with his chariots, and a pilgrim with his asses—as the aged peasant drops into the arms of the splendid youth in whom his image is reflected, who can help feeling that this is a case where "a wise son maketh a glad father?"

The proverbs of Scripture are not confined to the collection of Solomon; but some of those which we most frequently quote, are scattered over various books of the Old and New Testaments. "Like people, like priest,"—"The fathers have eaten sour grapes, and the children's teeth are set on edge," occur in the Prophets. "Everything is beautiful in its season,"—"A good name is better than precious ointment,"—"Cast thy bread upon the waters: for thou shalt find it after many days,"—are pro-

verbs of Solomon, but recorded in the book of Ecclesiastes. The Sermon on the Mount, and other discourses of our Lord, abound in aphorisms which have now become pre-eminently proverbial: "Let not thy left hand know what thy right hand doeth,"—"A city set on a hill cannot be hid,"—"It is more blessed to give than to receive." That proverb of the ancients, "Wickedness proceedeth from the wicked," re-appears in various new and striking forms. "The tree is known by its fruit,"—"A good man, out of the good treasure of the heart, bringeth forth good things; and an evil man, out of the evil treasure, bringeth forth evil things." With Napoleon it was so favourite a saying, "Sufficient unto the day is the evil thereof," that one of his admirers has given him the merit of originating the maxim. The apostolical epistles—that of St James more especially—are rich in true proverbs: such as, "A little leaven leaveneth the whole lump,"—"Behold, how great a matter,"—or, more literally, as the Vulgate renders, "how large a forest a little spark sets on fire!" Perhaps, however, the proverb from the apostolical writings in most frequent circulation, is the one which St Paul has adopted from Menander, and which, as Dean Alford suggests, may have become, in the days of the apostle, a current commonplace: "Evil communications corrupt good manners."

Over and above the Scriptural derivation of individual axioms, Christianity has exerted an incalculable influence on the proverbial literature of European nations, in the way of refining their language, and raising their tone. We have still some vulgar proverbs preserved in books, but, except amongst the offscourings of society, they are practically obsolete; and even Italy would hardly adopt the low and heartless morality of sayings still current in some Mohammedan countries: such as the servility of the Egyptian maxim, "Prostrate thyself before the wicked monkey in his day of power;" and the horrible selfishness of the saying, "If the water come like a deluge, place thy son under thy feet," referring to the Moslem tradition, that when the water overflowed the high places, the antediluvians tried to save themselves by standing on the bodies of their children.

Here, however, we have reached our limit. We only add, that "The Proverbs of Solomon, illustrated by the parallel proverbs of all nations," is still a desideratum in Biblical literature. It would be interesting to see how many of them, curiously metamorphosed, re-appear in the lands of the Christian and Mussulman; and it would also be found that some of them—perhaps from being too high and too holy for the average taste or ordinary uses of a fallen world—still remain untransplanted in their own "garden enclosed."

ART. VII.—*Souvenirs d'un Naturaliste, etc. The Rambles of a Naturalist on the Coasts of France, Spain, and Sicily.* By A. DE QUATREFAGES, Member of the Institute, Professor of Ethnology at the Museum of Natural History at the Jardin des Plantes, etc. etc. Translated, with the Author's sanction and co-operation, by E. C. ORTE, Honorary Member of the Literary and Philosophical Society of St. Andrews. In 2 vols., pp. 752. Lond.: 1857.

THERE is no subject of modern study more popular in its nature, or more likely to be generally cultivated, than that branch of Zoology which treats of the lower forms of animal life. Though minute in size and simple in organisation, the microscope invests them with an imposing magnitude; and the naturalist is fascinated with a display of forms, and the study of functions, which the vulgar eye can neither see nor appreciate. We cannot, indeed, compare them with the noble denizens of the forest and the jungle, which have been so long and so closely associated with human interests, nor with the more tractable races, which man has subjugated for his use, and which he rears for his sustenance.

These two divisions of animal life, the wild and the tame, have a separate and peculiar interest. In the investigation of their structure and functions, the zoologist and the physiologist have found a rich and ample field of discovery; and in the study of their manners, habits, and instincts, the naturalist, the philosopher, and even the poet, have received both instruction and amusement. The quadruped races, in powerful communities, still sway the sceptre over vast regions of the earth; holding their courts in the recesses of the rock and the forest, and making successful incursions into the civilisation which surrounds them.

The animals which man has tamed or reduced to servitude, must in all their relations possess a singular interest. In some cases his slaves or fellow-labourers, and in others the material of his food and his clothing, they belong to his domestic circle, engage his affections, and become the objects of his special care. Society, even, has recognised this affinity between man and beast; and has not hesitated to place the dumb and uncomplaining sufferer under the protection of law.

The tenants of the deep, secluded in their coral palaces and ocean caves, and withdrawn in a great degree from the observation, as well as from the companionship and hostility of man, have an inferior claim upon our protection and sympathy. Useless as our auxiliaries in toil, and harmless as enemies, they are

less connected with our social existence ; and, though gigantic in size, and beautiful in form, they contribute chiefly to our alimentary and domestic wants.

With the tenants of the air our relations are, perhaps, less personal and exciting. Our friends more than our enemies, they liberally share with us in the fruits of the earth, returning perhaps as much as they take, and contributing to the well-stored commissariat so bountifully provided for us. In the domestic prison to which we ungenerously consign them, they beguile by their song the cares and anxieties of home ; and when they joyously poise themselves in their native element, or settle on their orchestra of leaves and flowers, they add their voice to the noble anthem which external nature is ever raising to its King.

But whatever be our estimate of the relative place of the different classes into which the higher forms of animal life are divided, the details of their organisation, their functions, their uses, their habits, and their instincts, must ever possess a high degree of interest, and entitle us to rank this branch of Zoology among the most important of the sciences.

However attractive be the study of the higher forms of animal life, and however deep the interest with which we study their habits in the *Natural History of Buffon*, and their structure in the "*Animal Kingdom*" of Cuvier, there is in the Zoology of the lower animals a source of interest peculiar to itself. In the structure of man and the mammiferous tribes, we strive in vain to study, in the living state, the mechanism of their various organisations, and the play of the different functions on which life depends. Even the electric light cannot penetrate the opaque casket which encloses the chemical and mechanical apparatus of life ; and the physiologist is compelled to limit his researches to the anatomical structure of the lifeless organs which he explores. In the lower animals, on the contrary, the form and structure of the living organs, and the functions which they perform, are so clearly seen "as to invite science to raise the corner of the veil which conceals from us the mysteries of what we call life." When the animal, properly prepared, is placed under the microscope, the chemical and mechanical operations which it performs may be studied in every stage. We can follow the atom of food into the alimentary canal, and trace its progress,—noting its chemical changes, and observing the successive action of the animal organs and fluids, till its final exit into space.

With such means of research as are now afforded by the splendid microscopes of modern artists,¹ it is not a matter of sur-

¹ M. Quatrefages' long note on Microscopes is very imperfect. Its statements are unjust to English artists, and to Professor Amici. See this *Journal*, vol. xxv, p. 475-6, in contradiction of his opinions regarding diamond and jewel lenses.

prise that even the pupils of Cuvier, the most eminent naturalists in Europe, are devoting themselves with ardour and success to the study of the animalcular world. In the work which we have placed at the head of this article, and of which we propose to give our readers a general account, M. Quatrefages, a pupil of Cuvier's, and a distinguished member of the Imperial Institute of France, has reprinted, with several modifications, a series of articles which he communicated to the *Revue des Deux Mondes*. His leading object was to make the natural sciences instructive and amusing to the intelligent readers of that journal, and, at the same time, to induce the educated classes to entertain more correct ideas of Zoology, by pointing out the great truths which it has established, the numerous and startling facts which it has revealed, the problems of general Physiology which it has solved, and the profound questions of Natural Philosophy which none of the other sciences enable us to investigate.

In the execution of this task, M. Quatrefages has produced a work equally amusing and instructive. He carries us along with him to the coasts of France, Spain, and Sicily—to localities highly interesting and often little known. We sympathise with him in his personal adventures; we admire with him the picturesque or the wild scenery through which he wanders; we accompany him to the craters of Stromboli, Vesuvius, and *Ætna*; we visit with him ancient and ruined cities, explore osseous caverns, discuss geological problems, and collect algæ and zoophytes with Mr Milne Edwards, the companion of our author, in his submarine explorations. And in the midst of these various pursuits we are introduced to the wonders of animalcular life—to the contemplation of those marvellous and exquisitely beautiful organisms which have their dwelling in “the mysterious world of ocean;” and our attention is called to the “moral and religious ascendancy which the study of living beings is calculated to exert over the human mind.” The two volumes which contain these instructive details are written with much perspicuity and elegance; and they have been so admirably translated by Miss Otté, the well-known translator of Humboldt's *Cosmos*, that we never doubt, in the perusal of the work, that it was originally written in our own tongue.¹

Before setting out on his zoological rambles, M. Quatrefages introduces his readers to some of the singular animals which he had been previously studying, from the ponds or pools of

¹ M. Quatrefages has enriched his work with numerous valuable notes and biographical sketches of eminent naturalists, chiefly continental, the largest and most important of which Miss Otté has, very judiciously, thrown into an appendix. Among these notes the reader will find biographical sketches of several distinguished living naturalists, such as Humboldt, *Elle de Beaumont*, Milne Edwards, Muller, Van Beneden, Dumas, Agassiz, and Orbigny.

Mendon and Vincennes, from the basins in the gardens of Versailles, and from the ditches on the common highways. Here he found the *Rotifer*, of the subdivision *Vermes*, composed of rings like the draw-tubes of a telescope, by which it can contract itself into a sphere, and having at its proboscis two wheel-like organs, or wreaths of cilia, by which it swims and produces currents that carry its food into its mouth. Although water is its proper element, it inhabits the moss on the roofs of houses, dying when the sun dries up the moisture around it, and reviving when a shower supplies it with the fluid which it requires; thus employing several years to exhaust the eighteen days of life which nature has assigned to it. After sixteen alternations of drought and humidity, these animals have been known to revive, and it is even alleged that they have been restored to life after several years of desiccation. While within the animal, the egg contains the young coiled up spirally; and sometimes four or five eggs are so completely developed, that the young creep out of them, stretch themselves, and put their wheels in motion,—sometimes occupying two-thirds of the length of the parent! Through the transparent animal, eyes, liver, lungs, intestines, and reproductive organs, have been clearly seen. The *Hydatina senta*, as transparent as crystal, is another rotatory animalcule whose complicated organisation is revealed by the microscope. It is found in stagnant pools, and in the ruts of carriage-wheels; and when killed by drought, its eggs are often carried up by the winds to some drop of water, where they are developed and propagate their species. In eleven hours after the eggs are deposited, Ehrenberg observed within them the vibration of the anterior cilia of the young, and in twenty-four hours they escaped from the shell. The *Brachionus*, another of the revolving animals, covers with a cuirass its long tail and ciliary head upon the slightest indication of the approach of danger. It protrudes its eggs, and carries them on its back, till the young brachionus bursts with a bound from a slit, forming an oblong ball, which is soon developed into the perfect animal. Next come the *Diatomaceæ*, supposed by Ehrenberg to be animals, and by others to be vegetables. They inhabit infinitely small shields of silex of extreme beauty; and, though so minute that the point of a needle would crush hundreds of them by its touch, yet they have offered a stouter resistance to the revolutions on our globe than the gigantic skeletons of the mastodon and the elephant; and their remains form at this day entire rocks, and extensive strata which have been worked for ages under the name of *tripoli*, and which are employed in polishing the domestic utensils which we daily use. Lastly, there were *Planaria*, and numerous infusorial animalcules, which multiply by self-division; “so that it may literally be said

that the son is half of his parent, and the grandson the quarter of his grandsire." The Planaria, in which the two sexes are united, swim by the help of vibratile cilia which cover the entire surface of their body; and they multiply by division, and by the formation of ova which are enclosed in a coloured capsule.

Attracted by structures so singular, and desirous of obtaining new materials for comparison, and investigating those larger types of the lower forms of animal life which exist only on the sea-shore, our author resolved to visit what is called the *Archipelago of Chaussey*, a group of bare and rocky islands of granite in the English Channel, opposite to Granville, and eight miles from the French coast.

Having provided himself with letters of introduction to the authorities, and packed up his microscope, dissecting instruments, and glass bottles, he left Paris, and established himself in a wretched farm-house on the Grande-Ile, the largest of the group, which are inhabited by fishermen, barilla collectors, and granite quarriers. Among the remarkable objects which arrested the attention of M. Quatrefages, was the appearance at low tide of certain parts of Chaussey. Granite blocks, of all shapes and sizes, are grouped together in a thousand different ways, some rising into pyramids, "others graduated and cut into irregular tiers of steps; others, again, heaped together into confused masses, like the ruins of some giant structure; at one place upheaved like colossal Druidical stones, and at another suspended, and so slightly poised, that a breath of air seems sufficient to overthrow them." Beneath this chaos of upheaved blocks, the regular stratification of the granite is readily discovered; and we are thus led to the explanation of a phenomenon which is of daily recurrence. During the cooling of the granite it was intersected by fissures, subsequently filled up by the debris which produces the rotten-stone. Unable to resist the shock of the waves, the rotten-stone is disintegrated, the more compact blocks are separated, and portions of rocks, nearly a thousand tons in weight, are thus detached from the main mass, and hurled to a distance of several yards by the ordinary action of the waves.

Having been for some time prevented, by the prevalence of storms, from pursuing his zoological inquiries, our author was at length enabled to explore the *Sacaviron*, a narrow channel which separates the island of Meule from the *Ile-aux-Oiseaux*. At the bottom of this deep and wild ravine, from which the ocean retreats only three or four times a year, every stone was a world within itself; and our author "admired, in all their glory, those unknown wonders of the deep, of which even our best museums afford not the least idea." In sheltered nooks he found the large chitons,—animals whose back is covered by a solid cuirass,

consisting of moveable pieces like the olden greaves. "The vaulted roofs of the little caverns, formed by the crumbling away of the rocks, were covered with a stratum of compound Ascidians, a species of molluscs which live and die without having moved from the same spot; while from this bright red ceiling there hung, like so many girandoles, transparent crystal-like clavelinæ, and the bright botrylli, whose conglomerated masses exhibit the colours and translucence of the agate." Among these molluscs there were thousands of zoophytes; while star-fishes of the finest carmine, and ophiuras, with their five long arms, were concealed beneath the stones. Sponges of every shape and colour lay among the branches of the Fucus, or clung to the rocks in interlacing meshes of delicate net-work; and sometimes a Holothuria would slowly move across this living carpet by means of its sucker-like feet, spreading out its coronet of arborescent tentacles. Amidst this profusion of life the hours passed rapidly, and our naturalist had hardly filled his boxes and bottles when the returning tide drove him to his boat.

In his earliest researches, the wandering annelids or sea-worms had attracted his special notice, but till now he had studied them only in engravings; yet though he had a tolerably exact idea of their structure, he had not the slightest conception of the interest which attached to a study of their form. He was charmed with the sight of the *Polynoa*, with its broad brown scales; with the *Phyllodoce*, with its hundred bright green rings; the *Eunice*, with its purple crest; the *Terebella*, encircled with a cloud of innumerable living cables, which serve it for arms; with the *Sabella*, and its rich fan; and with the *Serpula*, with its enamelled collar. These despised creatures seemed to him as worthy of a naturalist's homage, "as the most brilliant insect, or the fairest flower."

After this general notice of these singular creatures, M. Quatrefages invites the reader to examine them through his microscope, magnifying thirty times (or *diameters*, to use the more scientific name). In a little trough containing sea water, he finds an *Eunice* moving about, indignant at its captivity. Its many rings alternately contract and extend themselves into a spiral, and at every movement "emit flashes of light, in which all the prismatic colours are blended in the brightest metallic reflections." When these motions cease, it crawls along the bottom of the trough, throwing forward its thousand feet, and pushing out bundles of darts from the broad knobs which contain them. The sides of its trunk are studded with its organs of respiration, resembling vermilion plumes when they are swollen by the blood, which may be traced along the great dorsal vessel. At its head, enamelled with the brightest colours, are its five organs of touch,

encircling its irregularly puckered mouth, which pushes out a huge proboscis, with three pair of jaws as large as its body. "Is there any animal," says our author, "which can contend with it for the prize of decoration? The corslet of the brightest beetle, the speckled wings of the butterfly, the sparkling throat of the humming-bird, would all look pale when compared with the play of light flashing in large patches over the rings of its body, glowing in its golden threads, and sparkling over its amber and coral fringes."

Near to the Eunice are two *Cirrhatulæ*,—one of a dull red colour, with gold markings, and the other, of a black velvet hue, with a bright bluish iridescence. Through its long filamentous arms and branchiæ the blood ebbs and flows, dyeing them of the richest carmine, or leaving them of a faint yellow. A double crescent-formed eye surmounts their pointed snouts. The tangled skein which they have formed consists of living coils, ever binding and unbinding their glistening knobs, and catching up grains of sand and atoms of slime, till the annelid retires into an envelope of fragments, which, in clustering together, become a case which encloses and protects it.

In order to study more carefully this singular annelid, a higher power is applied. The hairs on the outer edge of its feet, forming two tufts, are placed there for its defence, combining every form of our aggressive weapons. Here are curved blades, with two cutting surfaces, convex and concave; there are the types of the broadsword of the cuirassier, the *sabre-poignard* of the artilleryman, and the *sabre-baïonnette* of the Vincennes chasseur. Elsewhere we have harpoons, fish-hooks, and cutting-blades of every shape fixed to sharp handles, straight or curved poignards, and arrows with their barbs bent backwards to tear the wound, but preserved by a sheath from fracture or from friction. If these instruments fail to destroy, every foot sends out a stronger spear when a grappling distance only separates the combatants. With living victims as their food, their weapons of attack and defence are absolutely necessary. Some seize their prey by their proboscis, or crush the little crustaceans and planarias in the embrace of their thousand arms; others pursue their victims over the sand, or through tufts of marine plants; while others perforate shells and devour their occupants. The Hermello thus makes havoc among oyster beds, and destroys whole colonies of this valuable mollusc. Thus destructive themselves, the annelids are in turn destroyed. Whittings, eels, and soles and plaice, have the art of drawing them, probably by suction, from the sand; while crabs and lobsters, protected by their solid carapace, wage against them a successful war.

In order to study the mutual hostilities of these warlike races, M. Quatrefages threw a large fisherman's worm (*Arenicola piscæ-*

torum) into a pool several feet wide. A troop of shrimps, at first scared by the sound, soon rallied; and, just as the annelid was about to bury itself in the sand, a daring shrimp seized it by its middle. "Emboldened," says our author, "by this example, the others lost no time in imitating it, and the poor *Arenicola* was pulled about in all directions, until a full-grown shrimp, darting from behind a tuft of coralline, dispersed his feebler comrades, and appropriated the booty to himself. I soon saw, however, that he would be compelled to divide the spoil; for, at that very instant, there poured from the moving sand some score of small turbos and buccinums, who, conscious that a victim was at hand, wished to participate in the feast. Without any sign of uncertainty or hesitation, they moved straight forward towards the arenicola, whose body was covered in the twinkling of an eye with these voracious molluscs. I thought his fate definitely settled, when a small shore crab (*Cancer Menas*) issued from beneath the stone, put to flight the shrimp, and, by dragging off the arenicola, very nearly upset all the turbos, who forthwith hurried back to their sandy haunts. Then, however, a large edible crab (*Cancer Pagurus*) appeared upon the scene, and the poor little manas was obliged, in his turn, to beat a retreat, in order to escape out of reach of the formidable pincers of his stronger kinsman. But he still kept a watchful eye over the dainty morsel which he had once tasted; and, taking advantage of a moment when the larger crab was withdrawing from the field, from some temporary emotion of alarm, he rapidly seized the long-disputed arenicola, and carried it for safety to some distance from the water's edge, where he might devour it at his ease on dry ground."

From this interesting account of the habits of animals previously known, M. Quatrefages proceeds with a well-earned pride to describe a new Zoophyte, the *Synapta Duvernœa*,¹ which he discovered in the sands of Chaussey. "Imagine," says he, "a rose-coloured crystal cylinder, about eighteen inches long, and one inch in diameter, marked throughout its whole length by five minute bands of white silk, and surmounted by a pale white living flower, whose twelve petals are gracefully curved backwards. In the midst of these tissues, whose delicate texture seems to surpass the most exquisite products of our industry, you must suppose an intestine of gauze-like tenuity, but completely filled up with large grains of granite, whose fine points and salient angles may be distinctly seen by the naked eye. It was this circumstance which especially struck me in the animal; for it appeared literally to partake of no other nourishment than the

¹ It belongs to a genus of the family of *Holothurida*, hitherto found only in the warmest seas.

coarse granite sand which surrounded it. But what unexpected wonders were revealed, when, with the scalpel and microscope, I penetrated to its inmost organism! In this animal, the walls of whose body were scarcely one-fiftieth of an inch thick, I could trace seven distinct layers of tissue, a skin, muscles, and membranes. I perceived that the petal-like tentacles were furnished with cupping-glasses, by which the synapta could ascend the polished surface of a glass; and, finally, I discovered that this animal, which appeared destitute of every means of attack or defence, was actually protected by a kind of mosaic, formed of small calcarous shields, bristling with double hooks, whose points, serrated like the arrows of the Carib, had even penetrated the skin of my hands."

Interesting as these details are, they are less marvellous than another property of this extraordinary animal, which our author had the satisfaction to discover. Having kept several synaptas alive in a vessel of sea water, he was surprised to observe that they had undergone a process of *self-consumption*. "First, they distended the posterior portion of their bodies, by suffering to accumulate in it the fluid which circulates between their intestines and integuments. By this means a stricture was easily produced, and the final separation of the posterior portion suddenly effected. Scarcity of food seemed to be the sole cause of these spontaneous amputations. It almost appeared as if the animal, feeling that it could not supply the whole of its body with nourishment, suppressed those parts which it might cost the entire organism too much to maintain; somewhat on the same principle as that by which all useless mouths are banished from a besieged town. This singular method of struggling against famine is maintained to the last moment; for, at the end of a few days, there frequently remained nothing more of the animal than a little spherical ball, crowned with tentacles. *The synapta had, by degrees, eat away the whole of its body, in order to keep life in its head.*"

After closing his account of this marvellous contrivance for sustaining life, our author is impressed with the noble tribute which the world of instinct, more than the world of stars, pays to the wisdom of their Divine Creator. "My God," may we not exclaim with Voltaire, "Thou art great!" "Who is there that cannot believe in Thee?"

We regret that our space will not permit us to give some account of our author's personal history during his residence on the Grande Ile, or of the scenery or the occupations of the people in this rarely visited part of the coast of France. On his return from the Archipelago of Chaussey to St Malo, the birth-place of Chateaubriand, the ship doubled the desolate point of Petit Bé, where the waves

are always beating against the last resting-place of that illustrious writer, who, during his lifetime, "caused his grave to be hollowed out on the summit of this rocky platform, as if the agitations of his well-spent life had not sufficed him, and as if, even after death, he yearned to linger among the storms of this world."

In studying the manners and the weapons of the bellicose races in the animalcular world, and in contemplating their ferocious contests, our author seems to have imbibed their warlike propensities. When, from the top of Mont Gros, he descries the island of Jersey in the distance, he denounces the successive governments of France for allowing it to remain in the possession of England; and when he reaches St Malo, he describes its dark granite houses as rising on tiers an hundred feet above the waves, and looking like so many beacon towers, keeping watch for the coming of an English flag, and ready to raise the cry to summon the brave St Malouins to the scene of action. Amid the grand and peaceful scenes displayed to him from Gros Mont, a pious naturalist would have scrupled to recommend a war of conquest; and in the dark granite houses of St Malo he should have recognised the quiet homes of industry, rather than the beacon towers of war.

The second Ramble of our author was to the Archipelago of Brehat, on the shores of Brittany, and in the department of the Côtes du Nord. After passing through St Brienc and Paimpol, he embarked for Brehat, which, with several islands and numerous rocks grouped around it, form a little archipelago extending towards the mouth of the river Pontrieux. At some distance from Kerwareva, the most northerly village in Brehat, rises the Pointe du Paon, which forms the northern extremity of the island, and from its wild beauty has a high degree of interest. It is composed of two lofty and enormous cliffs of granite abutting against each other, the sea having formed for itself a passage between the perpendicular rocks. After advancing a few paces between these two granite walls, the traveller is warned to retrace his steps by the rumbling of subterraneous water. A chasm, scarcely three feet across its mouth, yawns before him, widening towards high-water mark till it expands into a colossal funnel. A granite block of many hundred tons rests like a massive bridge upon the opposite cliffs of the gulph, which it spans. When a heavy sea strikes the shore, it rushes through the narrow pass, and in forcing itself below the bridge, *it raises the enormous block of granite*, breaking into a lofty vertical column of foam and mist. The huge granite bridge then falls back upon its unshaken supports, to be again and again upheaved by the rushing sea. "This struggle," says our author, "which has probably taken place for ages, will only terminate with the rupture of this transverse rocky mass, unless the overhanging walls, shaken by the incessant assaults of

the ocean, shall give way, and bury in one common wreck the huge bridge and the pass of the Paon."

At Brehat, and along the neighbouring coasts, this singular locality has acquired a supernatural character. The maiden, who longs to know when she is to become a wife, goes alone to the Pointe du Paon at the ebb of the spring-tides. Carrying a pebble from a particular part of the shore, she tosses it into the yawning chasm. If the stone reaches the bottom of the abyss without striking the rock, the maiden returns to her joyous home, assured of being a bride during the passing year; but if the stone has taken an inauspicious course, every rebound from the rock adds a year to her maidenhood, and the victim of superstition too frequently returns disappointed with her lot, and disqualified for its duties. Owing to the peculiar formation of this prophetic chasm, it requires much address to avoid its rocky sides; and as it is essential to the success of the charm that the stone be thrown at random, many a maiden has made the experiment in vain.

After giving an account of the geological structure of the island, the admixture of races in its population, its mild climate, its terrestrial and maritime fauna, the relation of organised beings—the permanence of the higher, and the organic variability of the lower animals—the author returns to the detail of his own original researches. We would willingly dwell on some of the more interesting points which he has so ably treated, especially the subject of derivative types, immediate and secondary; but we are more powerfully attracted by the *tubicolous* sisters of the warlike annelids, which we have already described.

Upon emerging from the egg, those "modest recluses" construct for themselves a tubular habitation, in which they live and die like a child in swaddling-clothes. It consists of a tube, either calcareous, or of the nature of parchment or leather. This tube, closed behind, has a circular aperture in front, out of which they seize their prey and aerate their blood. No microscope is necessary to study their marvellous forms. Dropping into a trough of sea water a fragment of rock or shell, its whole surface becomes covered with *Serpulas*, *Vermilias*, and *Cymospires*. Mark the little round shutter rising above each tube, which can be closed hermetically. Below this round plate are seen bud-like patches, in one place of a violet or carmine, and in another of a blue or orange tint, while farther on are tufts of every colour. Their countless coloured branches gradually expand into the form of a plume of ostrich feathers. They are "living flowers," whose brilliant petals close on the shaking of the fluid, while the plumes retire with the rapidity of lightning within their calcareous tube. Here, too, we have the *Chloremæ*, whose green blood circulates through a body covered with velvety hairs, and imbedded in a

transparent jelly. Here also are the *Amphicoræ*, with eyes both in their tails and heads; the *Terebellæ*, which extend their hundred arms to the distance of nearly a yard in search of particles of sand and shell for the construction of their houses; and finally, the *Sabellæ*, whose expanded branchiæ are frequently above a foot in diameter.

In describing the interior organisation of the annelids, our author takes the *Eunice sanguinea*, sometimes $2\frac{1}{2}$ feet, and in the Indian seas, often 5 or 6 feet long. It is divided into rings about $2\frac{1}{2}$ lines in length, and 9 in width. Having removed its richly iridescent skin, the intertwined network of which gives it its brilliant colours,¹ he lifted up layer after layer to observe its complicated anatomy, the nerves which animate it, the intestines which receive its food, the vessels which nourish it, and the muscles which give it motion. We cannot convey to the reader without drawings (which the author does not employ) any idea of these various organisations. It may suffice to state that, as the annelid has 300 rings, it must have one brain or chief nervous centre, 300 secondary centres, and 3000 nervous trunks. The process of alimementation is effected by not less than 280 stomachs! For the purposes of nutrition, it has 550 branchiæ, 600 hearts, and 600 arteries and veins. The muscular apparatus is surprising. Each ring is supplied with about 120 muscles; and, reckoning those of the proboscis and head, the annelid moves by means of more than *thirty thousand muscles!*

In contrast with this highly favoured worm, our author describes the *Doyeria*, a few lines long, in which the muscles of the trunk are blended into two or three layers, the digestive and nervous centres united, the circulatory organs reduced to a single dorsal trunk, and the respiratory organs wanting. In the *Aphlebina* the degradation is more manifest; the body is a mere sac enclosing a straight intestine, there are no circulatory organs, and the blood is moved only by cilia. As an example of extreme degradation, our author takes the *Nemertes Borlasii*, a worm 30 to 40 feet long (sometimes more than 100 feet), and only 5 or 6 lines wide, flat like a ribband, of a brown or violet colour, and like varnished leather. It is found under stones, rolled into a ball, and coiled into a thousand apparently inextricable knots. It glides through the water by means of fine vibratile cilia on every part of its body. Its tissues are so contractile that a nemertes 30 feet long, placed

¹ Our author states that these brilliant colours are due to a phenomenon of polarisation, caused by the interlaced arrangement of the very delicate fibres of the epidermis. This we cannot admit. To produce the polarised tints, we must have one laminated structure to polarise, and a transverse one to analyse the light. We have seen such colours thus produced in crystals of nitrate of potash, but there can be no such structure in the annelids.

in alcohol, is reduced to $2\frac{1}{2}$ or 3 feet! Although all the great apparatus of life is represented in this animal, it is reduced to its simplest expression. The same opening which receives its food, serves also for its rejection. Its ovaries are of some size, and the number of its ova cannot be less than *four or five hundred thousand!*

Hitherto M. Quatrefages had no companion in his travels or in his researches, and at Chaussey he had to endure hardships of no common kind. During three months he saw the sun only about half a dozen times. Rain or mist attended him in all his rambles; and he often returned so completely drenched, that he was obliged to lie in bed till his clothes were dried. In his one apartment he was inundated by the slightest storm. He one morning awoke with six inches of water under his bed. His steel instruments rusted, the salt dissolved in his salt-cellar, and a pound of sugar, which had been forgotten for a fortnight at the bottom of his cupboard, was converted into syrup.

In his journey to the coasts of Sicily he was more fortunate. In 1843 the Minister of Public Instruction appointed a scientific commission, consisting of our author, M. Milne Edwards, and M. Blanchard, to visit the coasts of Sicily. Leaving Paris on the 20th March 1844, they reached Naples on the 28th, and soon after arrived at Palermo. In this city and its neighbourhood they found many objects of the deepest interest. After admiring, in the palaces, churches, and cloisters of the city, the valuable carvings, and the precious marbles, malachites, and lapis lazulis with which they are adorned, and enjoying the beauties of the lovely valley of the *Conca d' Oro*, where the vegetation is entirely southern and African in its character, and where the citron and orange trees form forests from three to four miles in extent, they visited the famous grotto of San Ciro, a fine example of an *osseous breccia*, which contained fossil bones intermingled with sea-shells. The grotto is an irregular excavation, about forty or fifty feet deep and from twenty to thirty feet high, and its walls are still marked with the tools by which it was excavated. Caverns with masses of fossil bones have been long ago discovered in the Hartz Mountains and elsewhere. Dr Buckland found that the bones of bears, hyenas, and sometimes even of dogs, wolves, and jaguars, of a larger size than existing species, were interspersed in the mud which formed the bottom of the caverns; and he was led to consider these excavations as the resort of carnivorous animals, and of the victims on which they fed. It was afterwards discovered, however, that in limestone rocks without fossils, there were veins entirely filled with bones impacted in a matrix wholly different from the rock. The veins were, therefore, supposed to be ancient fissures, into which currents of water

had washed from the soil the skeletons which they bore. This explanation was confirmed in 1842 by MM. Constant Prevost and Desnoyers, who discovered at Montmœncy and Fontainebleau a great number of ancient fissures like those on the shores of the Mediterranean, where they are now forming. The former were *osseous breccias*, containing the remains of palæontological faunas; and the latter, *osseous caverns*, containing only the remains of existing animals. Before the grotto of San Ciro was dismantled, it was covered with the bones of elephants, hippopotami, deer, stags and dogs, agglutinated by calcareous infiltrations, or cemented by quartzose sand and indurated clay. Our author tells us that the bones were so numerous, that certain English travellers shipped them to London, where they were converted into *animal black*!

In order to carry out their plans of research, our naturalists resolved to circumnavigate Sicily in a boat of their own; and they succeeded in obtaining the *Santa Rosalia*, and her crew of seven men, for 16 francs a day. In advancing to the West, after passing the Castello di Molo, their attention was arrested by the singular nature of the beach, which was formed of limestone so unequally dense and highly porous, that the force of the waves had undermined the entire mass, and broken it up on all sides. "These semi-arches," says our author, "crowned and garlanded by the cactus and other shrubs, gave rise to a perfect labyrinth of grottoes, which defies all description. It would require the skill of the most accomplished artist to give an idea of the marvellous admixture of forms, colours, and effects produced by the vast halls in which a far larger pinnace than ours might have found shelter; where irregular porticoes, with strangely contorted pillars, seemed cut out of colossal agates; and where all the most widely differing colours, from milky-white to blood-red, or raven-black, were blended together, varied and contrasted in the most striking manner. But no artist's touch could convey an idea of these submarine grottoes. Those narrow and deep fissures, in which the waves had only just rippled over the arches at the water's edge, were engulfed and swallowed up amid the strangest and wildest sounds. The slight ripple raised by our small boat sufficed to awake these singular voices of the shore, which fall upon the ear like the prolonged cry of some colossal monster whose rest had been abruptly disturbed."

Our travellers spent their first night near the dismantled tower of Sferacavallo, distracted with sea-sickness, with the garlic and onion perfumes of seven unwashed Sicilian sailors, and, what was worse still, with the stench of the kitchen cockroach (*Blatta orientalis*), which swarmed in every crevice of the ship's timbers, and which at night emerged in thousands. These crea-

tures, sometimes two or three inches long, often destroy the entire cargo of trading vessels, and render the ship unfit for service.

At the small fishing village of *Torre dell' Isola* our naturalists found a resting-place in the manor-house occupied by the Padre Antonino, a poor Dominican, who performed the services of the sanctuary for ten pounds a-year. The three apartments which he gave them, with planks to sleep upon, softened by an inch and a half of wool and cotton, were speedily prepared to hold their microscopes and bottles, and they lost no time in beginning their researches.

In his first excursion, M. Quatrefages saw the ocean under an aspect entirely new to him. Owing to the marvellous transparency of the water, annelids and medusas, which appeared only a few inches from the surface, were actually at the depth of many feet. He could see beneath the boat, plains, valleys, and hills, here bare and rugged in their sides, and there clothed with verdant herbage, or spotted with tufts of shrubs. Amid these submarine precipices and sands, there lay bright red seaweeds and glossy fucus fronds, as distinctly revealed as if he had been suspended in space, or soaring like a bird to contemplate the varied features of hill and dale. These submarine recesses were the abode of strangely formed beings. Fishes, single and in shoals, were seen rushing among the tufts of seaweed, while Gorgonidæ, Caryophyllidæ, and a hundred different kinds of Polyzoaries, were "blooming in tufts of living flowers." Here were Holothurians climbing the rocks, star fishes of the hue of pomegranate, Molluscs crawling along, and now and then seized by the pincers of enormous spider-like crabs. There were strings of Salpæ, clear as crystal—animals alternately oviparous and viviparous, the single individuals being viviparous, and those aggregated in strings oviparous. There also were swarms of large spherical Berœes, whose strange organisation was discovered by M. Edwards; the Firole and the Diphyes, and the graceful Stephanomia, whose delicate living garlands of crystals and blossoms disappear when dried, leaving not a trace on the goblet which the night before they had adorned.

In order to study these derivatives of rare or imperfectly known types, recourse was had to every means of capturing them. Drags, pocket nets, skimming vessels, and dredges, were their implements at sea; and when these failed, one of the crew would strip, and, diving below, would bring up the desired prize. On shore, huge stones had to be turned and broken, and hammers and ponderous levers replaced their nets and silk-bags. A very curious formation, previously unnoticed, facilitated their researches among the rocks. Whenever calcareous rocks ran into the sea, they were encircled with a kind of causeway on a

level with the surface of the water, and following all the sinuosities of the shore. This compact cement, encircling a considerable part of the rocky coasts of Sicily, is the work of two species of small molluscs, of the genus *Vermetus*, which live united together in almost incredible numbers, and form the solid causeway by the combination of their interlaced tubes.

Laden with living treasures from the irregular cavities of the causeway, our naturalists steered their course to Castellamare, a town with 6000 people, and situated on the largest bay in Sicily. From the want of the humblest inn, they were lodged in a room, emptied for their use of a pile of half-rotten onions. Fortunately, however, they could not find on the shore any materials for their study, and contented themselves with visiting the temple and theatre of Segesta. In the midst of a desert, and on a high hill, there rose before them one of the most magnificent monuments of ancient art, in a state of perfect preservation. Not even one of the thirty-six columns of this noble temple, though thirty feet high and six feet wide, has tottered on its base; not a stone has been displaced from its simple cornice. Time and the elements have spared its sharp cut blocks, and given them only the colour of age. The stage of the theatre is in perfect preservation, and the lower tier of seats in tolerable condition. Of the city and its palaces not a fragment remains. The temple and the theatre are the only vestiges of that proud and opulent Segesta, which was once the rival of Agrigentum and Syracuse. Around these edifices, so miraculously preserved, the same scene meets the eye which entranced the gaze of Æneas and his companions.

Quitting Castellamare for San Tito, our travellers passed the 200 towers, once garrisoned with 10,000 men, which were built to protect the island from African pirates. In this miserable village they could hardly obtain food, and their lodging was of the most meagre character. Here, however, M. Blanchard acquired for the museum one of the subterranean cities in which the ants administer their republican institutions. In these insects, more than in the bee, a strange mixture of instinct and reason is evinced in actions of extreme complexity. Some live in trees, and others in excavations of the soil. Some gather food for the day's, and some even for the next day's consumption. Other communities rear herds and flocks of plant-lice, watch over them from their infancy, construct places to shelter them, or pasture them within the ant's nest, and then feed upon the saccharine fluid which the plant-lice secrete. Under a different instinct, some of the ant communities attack their neighbours, and, when successful, carry off eggs or young larvæ, which, after development, are brought up as slaves to do the work of their masters.

At San Vito, M. Edwards was successful in his researches. The Medusæ had been regarded as lumps of living jelly, till M. Dumeril injected milk into their digestive circulatory and reproductive organs. Ehrenberg observed their organs of sight, and M. Edward discovered the distinction of the sexes, and the existence of the same organisation in the entire family of the Medusidæ. In the allied family of the Beroïdæ, he found a remarkable uniformity of organisation along with a diversity of external forms so singular, that they have scarcely any character in common, excepting the form and action of their vibratile cilia. Our countryman, Professor Grant, had discovered their nervous system long before either Ehrenberg or M. Edwards.¹

Next to the Medusæ and Beroïdæ are the Stephanomias, the most extraordinary animals in the marine world. Round an axis of flexible crystal, sometimes a yard long, are attached by long transparent peduncles hundreds of small bodies like flower-buds, and in this garland are interspersed beads of the most vivid red, amid an infinity of filaments. Each of these parts is a special organ: one for seizing food, a second for digesting it, a third for respiration, a fourth for vision, and a fifth for propagating the species. The animal moves by means of water driven out by the contraction of little bells, the bells having their mouths directed backwards;—a structure unique in the animal kingdom.²

M. Quatrefages made here some important observations on the Syllis, an annelid about two or three inches long. It reproduces itself by developing a number of rings at its extremity, the first ring producing a head with eyes and antennæ. The parent and offspring are still united by the skin and intestine, so that the new animal lives on the remains of the food swallowed by the old one. After the new animal is swollen with eggs, it separates from the other; the eggs swell, the body bursts, the animal dies, and the germs within are diffused around. These animals are made to be only reproductive machines. Their offspring never exhibit the characteristics of their father or mother.³

Among the marvels of the marine world, not the least is the generation of the Medusæ. The egg produces a ciliated larva, which, after certain changes, is converted into the stem of a

¹ In examining one of these animals long ago, we found a small spot within the animal which had a polarising structure.

² M. Quatrefages mentions it as the opinion of some naturalists, that each of the Siphonophora is a colony of distinct but incomplete individuals, some of which are charged with the functions of locomotion, and others with those of nutrition, etc.

³ According to Steenstrup, some animals resemble their grandparents, and not their parents!

hydroid polypary, from which sprout numerous polypes. The same stem subsequently produces new buds, not like polypes, but which become true Medusæ! "Who," says our author, "would not exclaim that a miracle was performed, if he saw a hen drop an egg, and a reptile emerge from it, giving birth at once to an indefinite number of fishes and birds!"

On the backs of Sicilian mules our travellers arrived at Trapani, the ancient *Drepanum*, a town of 30,000 inhabitants, situated at the extreme western point of Italy; interesting chiefly from the beautiful women of San Julian¹ (supposed to be the descendants of the priestesses of the Erycinean Venus), and from the rock called *La Colombara*, which faces the harbour, and is the same rock which Virgil mentions as the goal at the boat race in the funeral games in honour of Anchises. Having found this locality destitute of the objects they desired, they set off in the *Rosalia* for the Archipelago of the *Ægades*, nine miles distant, consisting of three principal islands—Favignana, Levanzo, and Maritimo. The first of these, twenty miles in circuit, afforded ample materials for research. The Palermo limestone, which here underlies the calcareous rock, consists of countless zoophytes, sponges, and polyparies. A cubic foot of it would fill an entire collection. The capital of Favignana has 3000 inhabitants, a number which is nearly doubled by the garrison of three forts, and by 2000 convicts immured in the terrible dungeons of Fort St John. The most curious object in the town is its public clock, with two hands and no wheels. A citizen, in the keep of one of the forts, and having an hour-glass in his hand, strikes the hours with a hammer on a bell, and thus indicates to the community the march of time.

In the arm of the sea between Levanzo and Favignana, there is established a *tonnaro*, or tunny fishery, rented at 60,000 francs. The fish are caught by the *Madraque*, which is an actual park of a hundred feet square, with its walks and alleys all terminating in a vast labyrinth of chambers opening into one another, and ending in the *corpou*, or chamber of death. Our naturalists saw the process of capture, already immortalised by Joseph Vernet's picture of it. Five or six hundred tunnies, chased from chamber to chamber by the valves, which close behind them, reach at last the chamber of death. Its moveable floor of netting has been gradually lifted to near the surface of the water; and the proprietor of the fishery with his staff, and a group of ladies from Palermo, and a band of two hundred fisherman, stand prepared, the one to perform a bloody massacre, and the other to enjoy the sport. When the net floor is near the surface the tunnies become visible, darting through their

¹ A village situated on Mount Eryx.

watery prison. After various preliminary skirmishes between their bronze-limbed assailants and the helpless fishes, in which hooks and spears of all kinds are driven remorselessly into their flesh, the whistle of the master fisherman is heard, the men break into a song, the net floor, covered with struggling life, is near the surface, and the skirmish becomes a massacre. Hooks and harpoons cross one another in the unequal strife; cries of triumph encourage the butchers; and dumb and uncomplaining life—the dead with their torn and quivering flesh, and the dying in their convulsive agonies—sinks under the relentless strokes of its foes. In three hours, 554 fish were caught, each weighing 176 pounds, which with 400 still in the Madrague, would produce 70 tons, of the value of L.1720.

After denouncing this wholesale butchery as a wanton infliction of pain upon unresisting life, M. Quatrefages proceeds to give an account of the important researches and discoveries of M. Edwards, which at first met with much opposition, both in France and other countries. In a popular article like the present, it would be out of place to attempt to give the general reader any intelligible account of these discoveries. It may be sufficient to state, that in the superior animals, the various functions on which life depends are performed by special organs; while in the lower grades there are no distinct organs, and yet the animals *digest*, *absorb*, and *respire*, and fluids *circulate* through all their tissues. That is, the function is independent of the organ; each part of the body being equally adapted to perform simultaneously all the requisite physiological acts. But as these acts are accomplished at the same point, they cannot be as perfectly executed as if there had been a special organ for each. Hence the value of the principle developed twenty years ago by M. Edwards, "That the successive degrees of perfection attained by the different organisms in the animal kingdom, depend upon the extent to which functional labour is divided."

Owing to the zoological poverty of the western coasts of Sicily, our naturalists retraced their steps, and, returning to Palermo, proceeded to Cephalu and Milazzo (the residence of Louis Philippe during his exile), where they found suitable accommodation for themselves, and ample materials for study among the tufts of algæ and Fuci in the basins of the calcareous rocks. While M. Blanchard was bagging insects in thousands, black snakes, geckos, and lizards, his companions were arranging a new apparatus for pursuing the marine animals into their native rocks, deeply buried beneath the ocean. Furnished with a diving apparatus, fitted to his person, M. Edwards went to the bottom of the sea in the harbour of Milazzo, and the bay of Taormine, where, at the depth of twenty-five feet, he examined the

algæ and the zoophytes, and strove for nearly an hour to detach with a pickaxe some of the large panopas. Molluscs and zoophytes without number, and immense quantities of the eggs of the molluscs and annelids, were among his submarine acquisitions; and by these he was enabled to study every phase of their curious evolution. M. Quatrefages was rewarded, from the grottoes of the cape, with a new Gasteropodous mollusc, "one of the most marvellously beautiful gems he had ever seen." The smooth tentacles of our snails were replaced by two large crystal horns, each of which bore a tuft of rosy branches with violet blossoms, while its forehead was covered with a spangled veil of the finest gauze.

In order to compare the population of calcareous rocks with that of volcanic districts, our zoologists made a trip to Stromboli, a distance of nearly forty miles. The island, with about thirty houses built of lava, is merely a volcanic cone, nine miles in circuit, and almost 2000 feet high. Having found no animal life among its barren calcined rocks, they resolved to visit the volcano. With safe guides and stout staffs, they ascended a path of moving sand, through vines and thistles, till every trace of vegetation disappeared. In about three hours they reached the top of the old cone, 600 feet above the present crater, and on their arrival, they were greeted with an eruption. They saw the abyss kindling at their feet, while a jet of fire rose towards them with the noise of artillery. The crater encloses six mouths,—two ejecting smoke, and hydrochloric and sulphurous acid gases,—the third vomiting fiery stones with the noise of a heavy surf. The other three mouths exhibit only intermittent eruptions, two of them kindling and going out at the same time. The third, which gives fewer eruptions than the rest, is distinguished by the most formidable detonations, and by the highest jets of burning rocks and cinders. When the night had closed in upon them, a magnificent eruption took place. The three mouths played together, reflecting the red brightness of the lava, and revealing again the triple enclosure of the crater. In almost total darkness, they accomplished a dangerous descent; and, on their return to their boat, the sea was kindled into a blaze of light by the phosphorescent luminosity emitted by the crustaceans, annelids, and medusæ, who, at the reproductive season, emit a luminous flash at each muscular contraction. The waves, breaking against the shore, encircled it with a shining border, while every cliff had its wreath of fire. A bucket of the sea water was like a mass of melted lead when poured into the sea. Professor Ehrenberg supposes that some annelids have a special organ for producing light, like the female glow-worm, which has a luminous apparatus in its abdomen, in order to show to her mate the place where she

is to be found. This explanation, however, may be questioned; for MM. Audoin and Milne Edwards saw the phosphorescent fluid of the *Pholades* flow in a stream along the bottom of a vessel filled with alcohol, and afterwards combine into a luminous stratum without losing any of its brightness.

In their voyage of sixty miles from Stromboli to Messina, our travellers found curious specimens of the *Medusidæ*, and among others the *Vellela*, a lovely zoophyte, with its dark blue umbrella, having on its lower surface numerous suckers containing air, which ballasts them on the surface of the water, while the wind striking their vertical plates, like so many sails, enables them to float in large numbers on the ocean.

Having had no society during four months, MM. Edwards and Quatrefages had the good fortune to meet at Messina the celebrated traveller Ruppel, M. Tardi, Dr Cocco, and Dr Cupari of Pisa; and after some days of pleasant scientific intercourse, and the examination of the sand thrown up by the whirlpool of *Charybdis*, they returned to Sicily, and entered the harbour of *Jardini*, having found in the neighbouring bay of *Taormine* many objects of interest.

Without attempting to give our readers an account of the important researches in Embryology, which M. Edwards began so early as 1833, we shall state merely the general result which he obtained. In his first Memoir on the subject, he showed that the metamorphoses in the form of different crustaceans always tend to impress upon the animal a more special character, and that they follow one another in a determinate order, the most important characters being first manifested. That is, the embryo acquires first the characters of the subdivision to which it belongs, and then in succession those of the class, family, tribe, genus, subgenus, and species. In order to illustrate this, our author follows through all the phases of its existence the large *Terebella* (*Terebella annulosa*), an animal six or seven inches long, showing successively how the embryo belonged to the great division of the *Articulata*, then to that subdivision of it in which the body is divided into segments, then that it is a true annelid, and, finally, that it is a tubicolous worm. "Investigate it," he adds, "a little longer, and we shall be able to recognise its genus and its species." This is very much the same as if, being interested in obtaining detailed information respecting any individual, we were first to learn that he was born in the old continent; next, that he was a European; then, that he was a Frenchman; then, a Parisian; that he lived in such a street, in such a number; that he bore such and such a name; and, we may add, that he would be very glad to see M. Quatrefages.

Our author devotes the rest of his fifth chapter to an account

of the acquisitions and researches of M. Blanchard. He had collected above 2000 species of insects, represented by at least 8000 individuals. About 500 of these did not exist in the Museum of the Jardin des Plantes, and fully 300 were altogether new to science. In his investigations into the nervous systems of insects, he discovered that they possessed a complete nervous system; and he confirmed the general result obtained by Lyonnet and Strauss-Durckheim, that the nervous organism in insects is fully as complicated, if not more so, as in the largest animals, such as the elephant.

In concluding this chapter, our author is led to make the important remark, that the animal kingdom does not present one sole and progressive mode of development. On the contrary, from the very beginning of creation, there must have been simultaneously present the four fundamental groups which at the present hour include the entire mass of created animals; for we find that the *Vertebrata*, *Articulata*, *Mollusca*, and *Radiata*, are buried side by side in the ancient fossil beds of the earlier world. Even more than this, the three inferior divisions possessed at that remote period representatives of almost all existing classes; and if it is otherwise in respect to the *Vertebrata*,—if reptiles, birds, and mammals are wanting in these primitive faunas, a simple explanation of their absence would be furnished by the supposition, that the external conditions were incompatible with their mode of life.

In their voyage from Jarlini to Catania, the sight and sound of Mount *Ætna*, constantly in their view, inclined our naturalists to attempt its ascent. The ascent of Vesuvius is a mere walk,—that of Stromboli, a fatiguing excursion,—and that of *Ætna*, an arduous journey, not without danger. Catania, which they had now reached, though twenty-five miles distant from the great crater, is the direct product of the volcano. It stands within four beds of lava. Its houses are built, and its streets paved with lava. Its harbours have been filled up with the liquid fire, its gardens consumed, its walls overturned, and whole district buried under the burning torrent.

Though Mount *Ætna* rises in a pyramidal shape to nearly 11,000 feet, yet, owing to its base measuring from thirty to forty miles in circuit, it appears slightly elevated above the horizon. In the ascent of the mountain, which occupies forty-eight hours, the traveller is twice exposed to a variation of temperature of at least 72°, and a variation of pressure of 7517 pounds.

Leaving Catania at daybreak, they crossed the cultivated zone by a carriage-road, treading upon a bed of volcanic cinders, now pulverised by time, and bearing crops of grain, cherry, orange, and pomegranate orchards, and adorned with lovely villages and

charming country houses, built of lava and cemented with *pozzolane*, and sometimes resting on the very verge of an ancient crater. Amid this wealth and beauty we encounter huge black dykes of lava, the witnesses of past and the forecast shadows of future desolation. Behind the houses of Nicolosi, we see rising the double summit of Monti-Rossi, so called from the dark red colour of its scoriæ. In 1669, this crater buried under a shower of ashes the neighbouring country, and threatened Catania with destruction, though twelve miles distant from it. It consists of two cones close to each other, and nearly 1000 feet high. At Nicolosi the travellers were received by Dr Mario Gemellaro, one of three brothers who had devoted their lives to the study of *Ætna*. In 1804 they built and furnished a cottage for the reception of travellers. Two years afterwards it was destroyed, but soon replaced; and the new building was, in 1811, thrown down by an earthquake. With a subscription obtained through Lord Forbes, the commander of the English troops, a substantial house, the *Casa Inglese*, was erected, which the volcano, more merciful than man, has still spared. The herdsmen of Mount *Ætna*, however, more than once stole the furniture; and after it had been replaced, the Austrian officers, garrisoned at Catania, broke open the door in 1820, and burnt the furniture as firewood. After passing through dilapidated forests, and amid herds of cattle, they saw above them, like petrified torrents, the enormous lava beds of the *Boccarelle del Fuoco*, the twin craters, which in 1766 destroyed more than a million of oaks in the forest. At the *Casa del Bocco* they rested, and then entered the desert region. At the foot of Montagnuola, one of the largest secondary cones of the volcano, they saw the glaciers of Catania, and on account of the cold, they were obliged to climb on foot to the *Casa Inglese*, where they slept during the night. At two hours after midnight they resumed the ascent, and, on reaching the crater, stood motionless in the contemplation of the spectacle before them.

Beneath them yawned the great crater—a deep and irregular valley bristling with blocks of blue, green, and white lava, and variegated with lines of curling vapour, issuing from a thousand vents, and suffocating the bystanders with their acid emanations. From the highest point, which they soon reached, the whole of Sicily lay spread out before them—a scene which it is impossible to describe. The rising sun added to its grandeur; the gigantic shadow of *Ætna* reached across the entire island to the remotest horizon, and gradually shortened as the sun rose above the Ionian Sea.

After a parting look of the valley of the crater, the guides took them to the brink of the crater, which, in 1842, threw its lava

into the *Val del Bove*. The scene was strange and terrific. Eddies of fiery red smoke issued from a large vent. Deafening and whistling noises followed; and thousands of crossing and recrossing streams of smoke, whose hydrochloric acid vapours, irritating their bronchial tubes, forced them to a quick retreat. From the Casa they descended to obtain a view of the *Val del Bove*, a most arduous journey, in which they reached the *Torre del Filosofo*, the supposed habitation of Empedocles. From hence they saw the magnificent *Val del Bove*, six miles long and three broad, enclosed by perpendicular walls of lava older than the human race, and often rising to more than a thousand feet from their base. After suffering from a hurricane which raised clouds of sand that stung their faces like needles, they forgot their fatigues at the hospitable and well-furnished table of their host, Signor Abate, who had provided everything for the ascent.

Having been long desirous of studying the marine animals in the Bay of Biscay, where his friend, Alexander Brogniart, alone had preceded him, M. Quatrefages proceeded to Bayonne early in June 1847, furnished with the diaries and journals of his predecessor. After witnessing a raging storm at the mouth of the Adour, our author visited the village of Biarritz, which he describes as "the very realisation of some lovely and picturesque scene in an opera." It is now a fashionable watering-place. The Port Vieux, resembling an artificial basin, is perfectly adapted for bathing, and there the patriarchal customs of the place are still in force. Men and women, in suitable attire, swim and dive in the same pool, carrying on conversations and flirtations with each other, as at a party or on the promenade. It is an object of female ambition to reach the line thrown across the entrance of the harbour; and, in order to accomplish this, a swimming-belt, a pair of gourds, or the aid of some friendly cavalier, is necessary. The Basques or Spanish women are generally daring swimmers, and would often bring up a handful of gravel from a depth of ten feet.

About a mile from Biarritz is the *Chambre d'Amour*, a semi-circular hollow in the middle of inaccessible cliffs, to which the tide has sometimes penetrated. It is said to have been the rendezvous of two lovers, to whom it had often served as a trysting-place, which the ocean had long respected. *One day, however, a violent north-west wind raised the sea above its level; and on the following day, a fisherman, who penetrated into the cave, found the bodies of the lovers clasped in each other's arms.

Having ascertained that there were few marine animals at Biarritz, our author contented himself with making a large collection of fossils, and subsequently went to the Basque village of Guettary, six miles from St Jean de Luz. At Guettary he found

Polyopthalmians and Hermellas different from those in Sicily. The Hermellas, which are tubicolous annelids, live in little hillocks of sand, pierced by an infinity of minute openings, like a thick piece of honeycomb. The bodies of these curious creatures, about two inches long, have a bifurcated head bearing a double bright golden-coloured crown of strong, sharp, serrated silken threads. These crowns are the two sides of a solid door, or rather a true portcullis, which closes hermetically the entrance of their habitation. On the least alarm, the annelid darts with the rapidity of lightning into its house of sand. From the margin of the opening on its head issue about sixty violet filaments, like minute serpents, with which they seize their prey, and pick up, for the construction of their tubes, the grains of quartz or limestone, which are cemented together by a sort of mucus supplied by the animal. The feet of the Hermellas are bundles of cutting and serrated lances, issuing from little projections on the sides of their body. Cirrhi, bent like sickles, are placed on the back, and are the branchiae, which are distributed over every ring, instead of being united, as in other animals, at the head like the petals of a flower. The interior organisation of the Hermellas is equally singular. Through the whole length of its abdomen, the muscles, vessels, and nerves are all double, and the two halves are only kept together by the skin and a single digestive canal.

In studying the annelids, our author discovered many other phenomena equally remarkable. In this group there is an infinite variability of characters, which in other cases are constant. Their organs of motion and circulation vary remarkably in the different species. The respiratory system is sometimes enormously developed, and in other cases completely wanting. Even the nervous system is singularly variable, in the tubicolous annelids, many intermediate forms existing between the two extremes of development.

Among the annelids, the Polyopthalmians exhibit the most Proteus-like metamorphoses. It has long been questioned whether or not distinct organs of sense, more especially eyes, existed in the Mollusca, Articulata, and Radiata. Ehrenberg had found in the *Amphicora* certain coloured points, which he regarded as two eyes, at the end of its tail, like those upon its head.¹ In the allied animals, M. Quatrefages found these coloured points strangely multiplied, and could hardly believe in such a profusion of eyes. He saw, notwithstanding, the tail going first, exploring the objects without touching them, and avoiding obstacles as if seen with eyes. Still he could not discover either a lens or a retina. At length, however, he found both in the Polyopthalmians; and here he saw the fable of Argus realised. When at

¹ By an eye is meant a crystalline lens and a retina.

rest, this is a yellow, cylindrical, little worm, an inch long, with two rows of setæ which serve as feet, with which, and the contractions of its body, it moves with incredible rapidity, swimming in water by means of two large ciliated structures which act like paddle-wheels. It has on its head three eyes, each of which has two or three large crystalline lenses; and on each side of the rings of its body there is a red point, receiving a nerve, penetrating a mass of pigment which encloses a spherical lens. The same facts have been observed in the *Pecten* (the *Pilgrim's Shell*); and our author has discovered in the eyes in the mantle of a Mollusc almost all the parts which are present in the eyes of a mammal, even the eye-lashes and eye-brows, which in the form of fleshy cirrhi protect the delicate organ of vision. Grube, Krohn, and Will have detected the same organisation in the other genera of the acephalous Molluscs, and in the Spondyli, Tellinæ, Pinnae, Cirræ, Pectunculi, etc.

As in other annelids, the body of the Polyophtthalmians is formed of a series of similar rings joined piece by piece. A number may be killed or affected by gangrene without the rest suffering. Each is a complete animal, having a life of its own; so that the entire body is a colony, with the head as its chief. Organs of sensation, therefore, are alone wanting to make each ring a complete animal. This singular independence of the different portions of the same animal, and the diffusion of the faculties of perception through all parts of the nervous system, exists in insects "whose organic complication exceeds in many respects even that of man himself." Hence we see how the study of the lower animals leads us to ideas different from those which can be deduced from the exclusive study of the higher animals.

From St Jean de Luz our author went to St Sebastian, the capital of Guipiscoa. It stands at the foot of Mont Orgullo, and forms an irregular square, of less than 120,000 yards in area, and accommodating 9000 inhabitants. Reduced to ashes in 1813, the town is almost wholly new, with the exception of its two churches, and a few houses near them. After a long history of the Basques, and their manners and customs, M. Quatrefages proceeds to give an account of his zoological researches, which were limited chiefly to the *Teredo*, an acephalous Mollusc of the same class as the Oyster and Mussel, and yet at first sight without any resemblance to them. When removed from its tube it is a grey worm, sometimes a foot long, and half-an-inch in diameter, with a rounded head and bifurcated tail. The head consists of two immovable small valves; the mantle envelops all the viscera, and then divides into two tubes, which the animal contracts or extends at will. One of the tubes introduces the aerated water, and carries the food to its mouth, while the

other, in removing the exhausted water, collects the residue of digestion. Notwithstanding its delicate and fragile shell, the *Teredo* is one of the most formidable enemies of man. In a few weeks it will excavate so completely large openings in the thickest planks and piles of oak or pine, as to destroy ships at sea; and early in the last century one half of Holland was nearly engulfed, from the piles which supported her dykes having been destroyed by *Teredos*.

It has been supposed that wood, steeped in corrosive sublimate, resists the attacks of the *Teredo*; but as this mode cannot be generally applied, our author proceeds to describe a process by which the animal may be destroyed within a given space. The *Teredos* are of different sexes. The female lays her eggs within the folds of her respiratory organ, and here the young are born, and live for a certain time. When they undergo their last metamorphosis they quit their mother's branchiæ, and fixing themselves upon the nearest piece of wood, they construct their galleries, and are beyond the reach of attack. We must, therefore, destroy them before this period, or rather *prevent their birth*,—an object which may be effected by dissolving a little salt of mercury, lead, or copper, in the water which their mothers respire.

In all animals hitherto examined, the ovæ of the female are fertilised by minute organic particles, moving with extreme rapidity, not living animalcules, but having a certain share of vitality to enable them to move somewhat like the tail of a lizard separated from its body. The males emit this at random; and, existing in the aqueous mass, some of it finds its way into the branchiæ of the females, and vivifies the eggs which are there. Our author has found that a 20-millionth part of a mercurial salt, thrown into the water, would in two hours deprive the fluid of its vivifying power, and the 10-millionth part in 40 minutes. We have, therefore, only to throw a few handfuls of the poisonous salts into the surrounding water, in order to preserve the submerged wood in our marine docks or wharfs.

In the continuation of his eighth chapter, our author enters upon the great questions which are suggested by the study of Embryology. He inquires whence comes the germ of the new being? what are the laws which preside over its development? what is the probable part played by the two elements which almost always concur in the reproduction of the species? and he tells us that the same laws are applicable to plants and animals. A plant is multiplied by seeds, buds, bulbils, cuttings, etc.; and animals present to us analogous facts. Cut to pieces a *Hydra*, and in a few days each piece is a complete individual. This is reproduction by cuttings. The same *Hydra* will lay eggs with

a solid shell,—that is, it will produce true animal seeds; while, at another time, it will give off buds that grow into a young Hydra, which adheres like a parasite to its parent, and after seeking food on its own account, and attaining sufficient size, separates itself, and leads an independent existence. In certain plants there is a structure called the *bulbil*, intermediate between a seed and a bud. Though resembling a bud, it must, like the seed, be separated from the plant before it gives origin to a new individual. On the shell of the Synhydras there are protuberances, kept together by a horny net-work. This is the polypary, or common body, containing the entire colony. From this polypary buds are given off, which become Hydras, without leaving their place of birth, and therefore comport themselves like the branches of a tree. From the same polypary are ejected eggs, which, like the seed, are developed, and propagate the species after they are separated from the parent plant. A certain number of individuals generate deciduous buds, or true bulbils, which, without arms or mouths, only propagate their species, and are fed by their neighbours.

As every living being proceeds from a pre-existing germ, it has been a difficult problem to determine the origin, nature, and development of these germs. The doctrine generally received (that of *epigenesis* or *successive formations*) is, that buds, bulbils, eggs, or seeds are produced from a pre-existing individual,—that some have the vital activity necessary for their development, in which case there is neither father nor mother, while others require the special agency of one sex to vivify the mature germ secreted by the other.

Believing that the faunas of different regions correspond to the nature of the geological strata, our author visited La Rochelle, nearly halfway between Nantes and Bordeaux, with the view of confirming this general fact. He had found that limestones are less rich in marine animals than schists and granites; algæ and fuci, which cannot fix themselves securely to limestone, adhere firmly to granite; and where there are no marine plants there must be few animals. From these and other causes, the fauna of our shores must depend on the mineralogical composition of the strata and the geological structure of the district.

The Oolitic limestone of Rochelle, therefore, and the mud which pervades the coast, and which is hostile to the ova as well as to the adult animal, afforded almost no subjects for experiment. He was fortunate, however, in procuring the very curious animal whose existence in the seas of La Rochelle had been the chief inducement to make him visit the locality. This animal was the *Branchellion*, a worm, an inch or an inch and a half long, which lives as a parasite upon the Torpedo, a fish whose electrical

discharges shake even the strongest man. Like the leech, it has at each extremity a sucker for fixing itself; but its body, instead of being a single piece, as in all the allied animals, is divided into two distinct portions,—a round and spindle-shaped neck one-third of its whole length, while the other two-thirds resembles a dark violet-coloured leech, having on each side a series of thin laminae of a fan shape, and plaited on the edges. The organisation of the animal was very peculiar. He discovered ramified canals, giving origin to a net-work permeated by a perfectly colourless liquid loaded with moving granules. These laminae proved to be lymphatic branchiae, and the colourless liquid a nutrient fluid different from the blood, and requiring to be vivified by being brought into contact with air.

• In his zoological excursions, our author was struck with the remarkable encroachments which the sea had long been making on the coasts of Saintonge. This erosive action is in some cases compensated by the formation of Deltas at the mouths of rivers, which tend to fill up gulphs, as well as to wear away advancing promontories. The formation of the Bay of Mont St Michael since the Roman epoch, and the separation of the island of Sesambre, *now six miles from St Malo*, are facts proved only by tradition; but on the coast of Saintonge we have the testimony of history for the singular erosion of its rocky coast. Important towns have crumbled with the cliffs that overhung them. In the middle ages a high road passed from the point of Chatelaillon to the island of Aix, and on this road were built the towns of Montmeillan and Chatelaillon. The first of these is mentioned in the Annals of Rochelle; and Chatelaillon was once a fortified town, with a fine harbour, defended by lofty walls and deep fosses, not a trace of which remains. In 1660, seven towns which had commanded the bay were carried away by the storms of one winter; and a fort, erected early in the present century, has shared the same fate. The two towns we have mentioned, and the road which joined them, are now replaced by an arm of the sea about four miles wide, the work of the *Mer Sauvage*, the name which is here justly given to the Atlantic.

Having failed both at Angoulin and Chatelaillon in obtaining marine animals, our naturalist directed his attention to the curious spectacle presented by the adjoining coast. Between the isle of Aix and the shore lies the plateau of Chatelaillon, a plain of accumulated mud, which does not entirely replace the district on which Montmeillan and Chatelaillon were built. Driven back by currents, this mud has been distributed along the coast so as to fill up every calm bay and sheltered creek. So great, indeed, is the extent of these accumulations, that the embouchure of the Sevre has successively advanced behind many islands once far in

front of it, so that they are now so many hills scattered over the plain, as they were islands upon the sea. Maillezais, Marans, Velluire, Triaie, Maillé, Vildoux, and a dozen other villages, now on the shore, were surrounded by water in the thirteenth century. Only a hundred years ago La Dive was an island of steep rocks, and it is now standing in the midst of fields. From some facts respecting the condition of the Gulf of Poitou, M. Quatrefages is of opinion that the retreat of the sea may not be produced solely by the accumulation of soil, but may be the result of those interior forces which are now regularly and slowly raising up the coasts of Scandinavia.

After giving an interesting account of the Salt Marshes of Saintonge, our author describes the gigantic *Bouchots* or artificial *Mussel beds* of the communes of Esnandes, Charron, and Marsilly, with a population of 3000 souls. In 1834 these bouchots were 340 in number. Their original cost was 696,660 francs; their annual expense, 386,240; and their produce, a revenue of 123,760 francs. The bouchots, then arranged in four rows, now occupy seven rows, some of them measuring more than 1000 yards from their base to their summit. These bouchots now extend without interruption from Marsilly far beyond Charron, and form a gigantic stockade six miles long and two-and-a-half broad. They are also a sort of fish-preserves. The fishes which frequent them are generally small species, like the Sardines. The common shrimp, the *Crangon vulgaris*, which is smaller than the common prawn, the *Palæmon Serratus*, is caught in enormous quantities. In three or four minutes after plunging the net into the water, the hauls almost broke the poles of the net; and in less than half-an-hour they caught 200 lbs., which brought only three francs, or about a centime per pound!

In his search for marine animals, our author had little success at Esnandes and at Chatellaillon. He had obtained only five Branchellions; but the storms from the south-west brought into the waters of Saintonge some of the strange animals which swarm in the tropical seas; and he every day met with colonies of those insects, the *Termites*, which appear expressly created to recall to man sentiments of humility by their power of undermining his habitations. The *Termites* approximate to the *Libellule*, or dragon flies, although they are widely different in their habits. The dragon flies are carnivorous. In the larva state, they live at the bottom of ponds imbedded in mud. When an insect, mollusc, or even fish, is in their way, they uncoil a weapon like the spring of a watch, which is a sort of lower lip and arm, furnished with serrated and strong pincers, with which it seizes its prey, and takes it into its mouth. After being a year in water, it climbs some plant, where it suspends itself with its

head downwards. As soon as the sun has dried and hardened its skin, it suddenly splits and bursts, throwing away its useless garment, and emerging a dragon fly, which becomes perfect in a few hours. It then sets out in search of its prey, hovers like an eagle above its native pools, and rapidly describing circles, it seizes the first insect that it meets.

More social in their character, the Termites, like bees and ants, associate in numerous communities, where individuals of different forms represent different castes, and discharge different functions. Developed from eggs, the Termites present in their nests larvae, nymphs, and perfect insects, with great numbers of neuters, which perform the duties of soldiers and policemen. The larvae and nymphs build their houses, dig the mines, collect provisions, and encircle the common mother, whose eggs they receive and protect. The workers of the *Termes bellicosus* are only about $\frac{1}{4}$ th of an inch long, and the $\frac{1}{2}$ th of a grain in weight. Though delicate in structure, they attack the hardest bodies, excepting metals and stones, with their horns and serrated mandibles. The soldiers are about half an inch long, and $\frac{3}{4}$ ds of a grain in weight. Their enormous horny head, larger than their body, is armed with sharp pincers. The perfect insect is nearly $\frac{3}{4}$ ths of an inch long, weighs about $1\frac{1}{4}$ grain, and its wings, which it possesses *only for a few hours*, are about $2\frac{1}{2}$ inches from tip to tip. Some of the species build, round the branches of trees, nests as large as a sugar-barrel, composed of small pieces of wood, cemented by the gums of the locality and their own secretions; while the greater number construct above their subterranean galleries edifices that enclose their storehouses and nurseries. The two species, *Termes atrox* and *T. Mordax*, thus erect true columns, surmounted by a projecting roof or dome. These columns are about 9 inches high, and equally wide, and are made of clay, which becomes extremely hard. The interior consists of cells; and, when needed, new columns are built, so that the nest often resembles a group of monstrous toadstools. A nest of the *T. Bellicosus* at first consists of one or two conical towers, which soon multiply, and rise to the height of five feet. These towers at last touch each other, and become cemented together, resembling an irregularly dome-shaped hillock five or six yards high, and nearly as much in diameter. The great pyramid of Cheops is 480 feet high, about ninety-six times the height of a man, while the pyramid of the Termites is about a thousand times higher than the insect! Their subterranean cities, of which the pyramid is as it were the capital, have their streets, squares, storehouses of gums and the indurated juices of plants, foundling hospitals, and a palace—the residence of the actual father and mother of the community. They have also quarries, and arrangements for ventilation, and for maintaining a

uniform temperature in different seasons. In the large and oblong royal chamber is found only the royal pair. In the centre is the queen, without wings, with an abdomen nearly six inches long, and between 1500 and 2000 times larger than the rest of the body, equalling in weight 30,000 workers. The king, which is of the usual size, is generally concealed under one of the sides of the queen's abdomen. The workers and soldiers surround the queen with the most devout attention, feeding her, and removing to the nurseries the 80,000 eggs which she lays every day of the year! These eggs very soon issue from the nurseries as larvas similar to the workers, but smaller, and are the objects of the most attentive care. They subsequently assume the form of active labourers or soldiers; but the former alone become perfect insects. Early in the rainy season, when their wings are developed, the males and females, on some stormy evening, issue by millions from their subterranean retreats. After a few hours, their wings wither and fall, and next day the earth is strewn with their bodies.

The Termites are used as food by the Indians and natives of Africa. Smeathman considers them as delicate and wholesome food, and superior even to the famous palm grubs which, in the West Indies, form an exquisite dish at the tables of the rich.

Linnaeus regarded the Termites as the greatest scourge of the Indies. They often destroy inhabited buildings and storehouses, attacking the wood-work and everything within their reach. The Prefecture and the Arsenal of La Rochelle have suffered from these insects the most destructive ravages. The archives of the department were almost totally destroyed, and the hardest wood of the rooms excavated and reduced to powder. Various attempts have been made, but in vain, to destroy them. Powdered arsenic has in some cases succeeded. M. Quatrefages has found chlorine efficacious, and an attempt has been made to attack the Termites by ants; but in an experiment made with this view, the Termites cut the ants in two by their terrible forceps, and completely exterminated them.

We cannot close our notice of these interesting volumes without congratulating their author, not only on the many valuable and important contributions which he has made to the philosophy of Natural History, but on the general tone of his work, and on the high moral and religious sentiment which pervades it. The marvels of animal and animalcular life now disclosed by the microscope, stamp a high importance upon Zoology, and justify us in regarding it as the most progressive of the sciences. The study of the living world—of the hitherto unrecognised tenants of the earth, the ocean, and the air, must, for centuries to come, call forth all the resources of science, and summon to the microscope

intellects of the highest order. We can hardly look for discoveries of great novelty in the planetary and sidereal systems. Telescopes have nearly reached their limits in point of size, if not in point of perfection; and it would be presumptuous to hope that we shall ever acquire any knowledge of the structure, or of the inhabitants of the worlds above us. The sciences of Optics, Mechanics, Hydrostatics, and Pneumatics, have assumed, more or less, a stationary character, and it must therefore be from the other departments of knowledge that a rich harvest of discovery is to be reaped.

The science of life, however, the abode of instinct and intelligence, has a character essentially nobler than them all. Its objects are infinite in number, and exciting in interest; and it will require ages to discover and to develop the countless organisations of being, and the strange functions of life, yet concealed from our view. The microscope, imperfect though it be, is the instrument by which these great results will be achieved; and when it has acquired new powers of penetration and enlargement, it cannot fail to reveal to us marvellous secrets, lifting the veil which shrouds the mysteries of our intellectual nature, and throwing light on questions which human reason has not ventured to approach.

In the more imposing creations of planets and stars, which appeal to us chiefly by their magnitude and the precise movements which they perform, men of little faith see only the operation of general laws, and overlook the beneficent power which creates and sustains. It is otherwise in the world of life and instinct. Every structure, and every function similar in purpose, though unlike in character to our own, excite our sympathy, and call forth our love and admiration. It is when the Divine arm is at work before our eyes, and under our hands, that reason recognises its presence, and the affections feel its power.

- ART. VIII.—1. *Minutes of Evidence taken before the Select Committee on Bank Acts.* 1857.
2. *A History of Prices.* Vols. 5 and 6. By THOMAS TOOKE, F.R.S., and WILLIAM NEWMARCH. 1857.
3. *Considerations on the State of the Currency.* By THOMAS TOOKE, F.R.S. 1826.
4. *Capital, Currency, and Banking.* By JAMES WILSON, Esq., M.P. 1847.
5. *Elements of Political Economy.* By HENRY DUNNING MACLEOD, Esq. 1858.
6. *Currency, Self-regulating and Elastic.* 1855.
7. *True Principles of Currency.* By WM. LYON M'PHIN, Esq. (Author of the above). 1857.

"THERE is a word," says Sydney Smith, in commencing a course of lectures on metaphysics, "of dire sound and horrible import, which I would fain have kept concealed if I possibly could; but, as this is not feasible, I shall even meet the danger at once, and get out of it as well as I can." Much the same might be the feelings of a writer in announcing a discourse on the subject of the "currency"—that word of strange fascination to a few, of "dire sound and horrible import" to the many; and yet we scarcely think our readers will require an apology for inviting their attention, at the present time, to a currency discussion. We have just seen, and are still witnessing, the progress of a commercial revolution of unprecedented violence and magnitude, involving the fortunes, and happiness, and character, of thousands, and of this, the currency has at least been the proximate and ostensible cause. The Bank rate of discount has been raised, and immediately great commercial establishments have fallen. The foreign exchanges have become adverse, the reserve of gold has been diminished, and the consequences have been felt throughout every part of our industrial and social fabric. Houses of long-established position, and firms of mushroom growth, have alike bent before the storm. Merchant princes and small annuitants, have gone to ruin together. Families, lately revelling in opulence, and surrounded with all the appliances and means of luxury, have been rudely awakened from their dream of enjoyment, to find themselves penniless. And, what is of still graver import, large populations, depending for their daily bread on their daily labour, have been suddenly thrown out of employment, and are already constituting, it is to be feared, a large addition to the mass, never insignificant, of

destitution and crime. With events so full of human interest in progress before our eyes, and directly resulting from a derangement of our monetary affairs, an investigation into the principles of our currency, cannot surely be mistimed; and, although the subject may be less attractive than others which come within our scope, still, we trust, the uninitiated reader will not find it so "harsh and crabbed," as the jangling of recent controversies might have led him to suppose.

It is impossible to have dipped at all into these controversies without being struck with the pertinacity with which the charge is bandied about from one controversialist to another, of confounding "capital" with "currency." The practice has now passed from learned treatises and proceedings of select committees into the debates of Parliament; and scarcely an honourable member speaks, who does not charge all the honourable and right honourable gentlemen who have preceded him, with this confusion. We are bound to say that, as far as our reading and experience have gone, the charge, from whatever bench or school proceeding, is in general well-founded. Mr Wilson, some years ago, published a volume, the title of which will be found prefixed to this article, for the special purpose of pointing out this distinction; and it appears to us, that he has more completely succeeded in confounding the two ideas, than even Mr Macleod, who has recently published two very large volumes to prove that no distinction exists. It may be that our attempt at a disentanglement will not prove more successful than the labours of those who have preceded us. Still, as it is agreed on all hands, and as we ourselves concur in the opinion, that nothing can be known of currency till this point be cleared up, it is plain that the attempt must be made, and to this we now entreat the reader's patient attention.

The basis of the idea of "capital" appears to us to be the conception of productive, as distinguished from unproductive, wealth—wealth which propagates itself, as distinguished from wealth which conduces only to utility or enjoyment, and leaves behind no exchangeable result. Thus, a steam-engine is "capital;" the coal which it consumes is "capital;" the raw material which it assists in working up is "capital;" and equally so are the food, clothing, and shelter afforded to the labourer, in order to qualify him for his work, as well as the acquired skill embodied in his person; in short, every thing which is conducive to the effectual carrying forward of the business of production and distribution—whatever can be made the means of creating a value which did not exist before, comes within the category of productive wealth, and is therefore "capital;" and, on the other hand, whatever is subservient merely to enjoyment—as a fine mansion,

a handsome equipage, the materials of a sumptuous banquet—is unproductive wealth; its consumption is not followed by any new product or increased value, and it is therefore excluded from the category of “capital.” That this is no arbitrary or fanciful distinction, but one founded in the nature of things and fundamental in the science of wealth, will be evident, if we consider that the progress of a nation in opulence, or its ability to meet a great emergency—to support, for example, the strain of an exhausting war—depends not upon its aggregate riches, these would be quickly used up, but upon its resources, and of these its “capital,” or procreative wealth, is the most important item.

Now, amongst those things which are employed in facilitating the business of producing and distributing wealth, is “money,” described, in the singularly appropriate language of Adam Smith, as “the great wheel of circulation.” We say, singularly appropriate language, because money is in all its essential attributes strictly analogous to a machine, performing certain functions in the economy of wealth, and enabling us, by its assistance, to accomplish results, which, without it, would either be altogether impracticable, or could only be accomplished at a much greater sacrifice of time and trouble. Money is, therefore, in the language of the same high authority, “a part and a very valuable part, of the capital of society;” and this being so, it is evident that, when we distinguish between “capital” and “money” or “currency,” what we have in view is a distinction between one portion of capital and the rest of it—between the instrument which performs one special function in the economy of wealth, viz., that of facilitating exchange, and those other elements of capital, as machinery, raw materials, food and clothing, which are employed in promoting more directly the same result. It thus appears that “capital” is distinguished, on the one hand, from that large portion of the general wealth of society which is consumed unproductively, and, on the other, from that particular portion of productive wealth, viz., money, which is employed in facilitating the exchange of commodities in general.

This is the distinction to which an analysis of the conditions of productive operations naturally leads us; and we believe it will be found to be substantially the same with that which all the best authorities in economic science, from Adam Smith downwards, have recognised as most convenient, at least when they have set themselves consciously to discriminate between the ideas in question—how little they have observed the distinction throughout their subsequent reasonings we shall have occasion presently to show.

Money, we have said, is a portion of the general capital of society, strictly analogous in its character to those other agents

by which labour is economized, and the business of commerce facilitated ; and, this being so, the necessity may not be at once evident for assigning to its special consideration a separate province of the general science of wealth. Why, it may be asked, distinguish between capital and currency rather than between capital and any other agent by which the work of production and distribution is assisted—between capital, *e.g.*, and railroads ?

The answer is, that in civilized communities all industrial and commercial operations are seen through the medium, or are estimated by the standard of money. Special and narrow as the function of money is, it intervenes in every transaction, either to measure it or directly to give effect to it. All the phenomena of wealth become thus, in their immediate aspects, monetary phenomena. In order, therefore, that we should comprehend the true character of the economic facts, we must understand the nature of the medium through which they are seen, and, in this manner, subsidiary and ancillary to the general discussions of political economy, arise the narrower investigations of monetary science.

The nature of the relation subsisting between monetary phenomena and the real transactions which they represent, is that portion of the science of wealth, which, notwithstanding the important contributions that have been made to it of late years, seems to us still to stand in most need of elucidation. The fundamental principles on which the production and distribution of wealth depend, have indeed been reasoned out with considerable success ; and, on the other hand, the phenomena presented by the markets of produce and of securities, and the movements of the precious metals in connection with the fluctuations of commerce, have been observed with much accuracy ; but the mode in which these two things influence and react on each other—the precise point at which they come into contact—this, we think, has not yet been exhibited in a sufficiently clear and apprehensible form. We find, on the one hand, a sect of able thinkers, who, starting from the principles of political economy, have arrived, by a series of irrefragable deductions, at certain general conclusions respecting the laws which govern the distribution of the precious metals amongst commercial nations, but who, having reached this point, entirely fail, as it seems to us, to connect the maxims thus obtained, with the actual events of the money market. And, on the other hand, we have a class of minds of a different order, who, taking hold of the problem by the other end, and fixing their attention exclusively on the monetary medium, arrive at certain empirical generalizations concerning the order of the appearances which it presents ; but who, from being ignorant or unmindful of the profound connection subsisting between these monetary phenomena and the mental and physical forces which are operative in production,

the moment they extend their speculations beyond the surface of affairs, straightway lose themselves in all kinds of utopian extravagances and impossible projects. It must be owned, too, that there is a class of writers which comes under neither of these descriptions, including men who, while profoundly sensible of the merely subordinate character of monetary influences, and with unfaltering faith in the truths of economic science, still keep their minds open to the teachings of experience; and, perceiving discrepancies between their theories and events, prefer patient enquiry to self-asserting dogmatism, and to trace the disturbing element to its source, than to ignore its existence. It is to writers of this class that monetary science has been hitherto most indebted, and it is to them it must look for the solution of its still unsolved problems.

In all monetary discussions, it will be found that the point on which controversialists, when brought into close quarters, finally join issue, is the rate of interest, and the causes which determine its amount. The rate of interest is not only the exponent of ease or pressure in the money market, it is the proximate cause, producing either of these states; the question, therefore, of the conditions on which the rate of interest depends, becomes the turning point of the whole controversy. Writers who are at one on this point, seldom differ materially in their other views; writers who disagree on this, have seldom much else in common. If, with Lord Overstone, and the thorough-going supporters of our present currency laws, we hold that fluctuations in the rate of interest are either inevitable or useful, it is evident that all attempts to moderate the rate of interest must either be futile or hurtful; and, when pressure and discredit occur, we have nothing for it but to bear the strain as best we may. If, on the contrary, with Mr Tooke and Mr Mill, we hold that the causes on which the rate of interest depends are, within certain considerable limits, amenable to control, and that the moderation of its extreme oscillations is, moreover, a desirable consummation, then, our views of the regulation of the currency, will be modified accordingly. And, lastly, if we adopt the faith of Mr M'Phin, and regard the rate of interest as being permanently, as well as in its temporary oscillations, amenable to legislative management, then we shall probably also concur in his conclusions, and support his ingenious plan for providing, on the one hand, abundance of money on easy terms to all comers, and, on the other, a safe and profitable investment for all spare funds, by the simple expedient of an Act of Parliament.

We shall examine each of these views in order.

And, first, with regard to the uncompromising supporters of the present system of things, we shall state their doctrine, as far as possible, in the language of its able and accomplished exponent,

Lord Overstone. According to the principles enunciated by Lord Overstone in the course of his evidence before the Select Committee of last Session—"The fluctuations in the rate of interest arise from one of two causes,—an alteration in the value of capital, or an alteration in the amount of money in a country. All great fluctuations of interest, great, either in their duration or in the extent of the fluctuation, may be distinctly traced to alterations in the value of capital," . . . "the minor fluctuations in the rate of interest, which arise from an alteration in the quantity of money, are small, both in extent and in duration. They are frequent, and the more rapid and frequent they are, the more effectual they are for accomplishing their destined purpose, without serious inconvenience to the public;"—that purpose being the maintenance of the equilibrium of prices amongst commercial nations. The rate of interest, thus depending in its great fluctuations on the value of capital; we have next to ask, of what capital consists? In reply to this, we are told that, "Capital consists of various commodities, by means of which trade is carried on; there is fixed capital, and there is circulating capital. Your ships, your docks, your wharfs, your roads, your bridges, your mills, warehouses, etc., are fixed capital. Your provisions, your clothes, and things which are necessary to sustain week by week the labourer; all raw materials,—cotton, wool, silk, iron, etc., are circulating capital." When, therefore, it is said, that "all the great fluctuations in the rate of interest are owing to alterations in the value of capital," what is meant is, that they are owing to alterations in the demand for, and supply of, such articles as are here enumerated. It is true, that this demand makes itself felt through a demand for money; "but why do people want to obtain money? not to keep it in their pockets, but they want to obtain money, because, through the money they obtain command of the capital of the capitalist, to carry on the business of persons who are not capitalists." The rise in the rate of interest in 1847, and again, that during the last two years, furnish, it is conceived, striking practical illustrations of this principle; the value of capital in 1847 being increased, and by consequence, the rate of interest being raised, through its scarcity, and, in the latter period, through the extended demand for it consequent upon the great expansion of the trade of the country during the time in question. Again, in 1825, in 1837, in 1839, all periods in which great fluctuations in the rate of interest occurred—the pressure on the money market, we are told, was the consequence of a want of capital; the object of the mercantile community being to get possession, not of money to pay their debts, but of "capital to support their business." So far as to the causes of "the greater fluctuations:"—with regard

to "the minor fluctuations," these arise, as has been said, from "alterations in the quantity of money in a country." Now, the "money" of the country consists of coin and bank notes, whether circulating in the hands of the public, or lying in the reserves of the Bank of England (understanding by the Bank of England, the Banking Department) or of the other banks of the country, including, moreover, not only the actual notes, but the potential notes, that is to say, the notes which under the Act of '44, they are at liberty to issue without a proportional increase of gold. Under the action of an adverse foreign exchange, the money of the country is diminished, "the diminution raises the value of the money that remains," and "the bank is obliged to conform to that rise in the value of money," by a corresponding rise in its rate of discount; but "the fluctuations in the rate of interest which arise from such an alteration in the quantity of money in a country, are very small, both as regards their extent and their duration;" and, if it should appear that, in point of fact, a very low rate of interest occurred simultaneously with a very large accumulation of bullion in the bank; or, on the other hand, a very high rate of interest, with a very diminished stock of bullion, these occurrences are not to be looked upon in the light of cause and effect: "there may, indeed, be a connection, but it is not a connection of principle:"—it is "a coincidence of time."

From these principles the justification of our present monetary code easily follows. Inasmuch as it is the "currency," and not the "capital" of the country, which the law regulates, it can have no influence on "the greater fluctuations" in the rate of interest,—such as we have lately witnessed; these, according to the theory, "being the consequence of alterations in the value of capital." What the Act of 1844 accomplishes, is to make the currency of the country (in the sense defined) expand and contract with the movements of bullion,—that is to say, as if it were a metallic one. It is, therefore, only for those "minor fluctuations" in the rate of interest, which depend upon alterations in the quantity of money, that the Act is responsible. Now, those "minor fluctuations" constitute the machinery by which the exchanges with foreign countries are corrected, and the equilibrium of prices amongst commercial nations maintained: "the more rapid and frequent they are, the more minute they will be, and the more effectually will they accomplish their object." The effect of the Act of '44, then, is, by making the currency conform to the movements of bullion, to compel the Bank of England to follow, more promptly than it otherwise would, the fluctuations in the market rate of interest, which are consequent upon changes in the quantity of money. It thus renders more rapid and frequent, and, therefore, more minute, those changes in the

rate of interest, by which the exchanges with foreign countries are controlled, and the equilibrium of general prices maintained; and herein consists its great merit.¹

Such is the theory, according to the most recent and authentic exposition of it, in conformity with which our present currency system has been framed, and by which it has been defended; it comes to us not as the dream of some recluse scholar, but as embodying the mature conceptions of undoubtedly able and acute minds—men as conversant with the practical details of commerce, as with the principles of economic science. Seldom has a system of doctrines been presented to the world under fairer auspices, or with higher prestige; and yet, we will venture to say, that one more entirely disregarded, in its most important features, of the plainest facts, has seldom been spun from the brain of a visionary;—disregarded, we say, of the plainest and most unequivocal facts; because, we think, there is no fact more certain than this, that the greatest and most striking fluctuations which occur in the rate of interest—such fluctuations as have lately been witnessed in this country and in America—are the consequence *purely* of a demand for money, and in no respect of a demand for capital; that is to say, of a demand for legal tender with which to discharge monetary obligations, *not* for commodities with which to carry on business. It is indeed admitted by the theory, that, in the first instance, it is money that is sought for; but “why,” it is asked, “do people want money? not to keep it in their pockets, but to obtain with it command of capital, in order to carry on their business.” To carry on their business!—with capital borrowed at from 10 to 20 and 30 per cent., and in America, at rates more than double these? What, we should like to know, is the notion entertained of the rate of profits prevailing in Great Britain and America, which can afford such deductions, and yet leave a sufficient inducement to borrow? So far is it from being the case that people were borrowing money in order to get possession of capital, that the very opposite was the truth;—people were selling capital in order to obtain money,—a fact which was very unmistakably indicated by a marked fall in prices of all the ingredients of capital. And this, be it remarked, is no feature peculiar to the recent crisis; it is the common feature, more or less distinctly marked, of all periods of commercial discredit. It was true of 1826, 1837, 1839, and even, though in a less degree, of 1847—the very case which Lord Overstone takes as an illustration of his theory—as well as of 1857. Or, let us try the

¹ Lord Overstone's evidence before the Select Committee on the Bank Acts. We refer the reader particularly to the answers to questions—3651–2; 3718; 3724–7; 3743–61; 3800; 3804; 3834–5.

doctrine by another test. If it be true that all the great fluctuations in the rate of interest depend on changes in the value of capital, we should have reason to expect a great rise in the rate of interest, invariably co-existing either with a diminished supply of capital or with an increased demand for it. Now, one of the most striking circumstances connected with the recent American crisis, was this—that it followed immediately upon a harvest of unusual abundance; during the whole period of pressure, the country was teeming with all the elements of real wealth; and the same was true of the crisis in this country, though in a somewhat less marked degree. So that the supply of capital—of the commodities with which trade is carried on—was more than usually abundant throughout the whole period of our difficulties. And then, with regard to demand, so far from business having been extended contemporaneously with the advance in the rate of interest, we know that the reverse has been the case; more than half the mills and manufactories in the two countries having stopped work, and business being contracted within the narrowest dimensions. Are these indications of an increased demand for capital?

And not less reckless of facts, it appears to us, is the statement, that there is no connection in principle, but merely a coincidence in point of time, between high and low rates of interest, and a small and large reserve of bullion. One scarcely knows how to deal with a proposition of this kind. It is like denying that the sun shines at noon-day. It is as if one said—“True it is that the light of day follows the rising of the sun, and the shades of night his setting, but there is here no connection of principle, it is a mere coincidence of time.”

Indeed, so wholly untenable is the doctrine, when closely examined, so entirely at variance with the most striking phenomena of the money market, that, however plausible as an abstract theory, it seems impossible it should have retained its hold on minds so practical, as well as so able, as those of Lord Overstone and others of his school, were it not for another sense, in which the terms “capital” and “currency” are used,—the confusion between which and the more scientific use of the words, has powerfully aided the prevalence of the fallacy. This will sufficiently appear when we have considered the doctrine of Mr Tooke, which we now proceed to examine.

According to the views of Mr Tooke, the rate of interest depends upon the wants and means of the community, in relation to a fund, which he designates as “monied capital.” This fund, to be distinguished, on the one hand, from “capital in the scientific use of the term, as applied to the actual funds (raw materials, etc.) destined to reproduction;” and, on the other,

from the circulating medium, "by which the purchase of commodities is effected,"—consists of that portion of the general purchasing power "which is lent on the security of bills—on discount, on mortgage, or on any kind of security." In order to entitle any funds to be regarded as "monied capital," it is not enough that they should be destined to be expended in the purchase of "capital;" since, "when the owner of a capital employs it actively in reproduction, he does not come under the head of those capitalists, the proportion of whom, to the number of borrowers, determines the rate of interest. It is only that class of capitals, "the owners of which are unwilling, or unable to employ their money actively themselves, which has any immediate influence on the rate of interest." Again, "a material consideration to be borne in mind is, that it is only so long as those capitals are floating or disposable, that they operate on the rate of interest. When once they are invested, whether for a long or short time, they are out of the competition of lendable capitals, and cease to affect directly the rate of interest." The "monied capital" of the country being thus described and limited, in order to judge further of the causes operating on the rate of interest, it becomes necessary to investigate the character and motives of the persons, who, either as lenders or borrowers, regulate the supply of, and demand for, this fund; and to the elucidation of these circumstances, Mr Tooke has accordingly addressed himself, with his usual discrimination and ability.¹

The work from which the foregoing statements are abridged, was published some thirty years since, and contains, so far as our reading and judgment go, the first correct announcement of the principles which determine the rate of interest. The disengagement of this fund of "monied capital," at once from the capital of the country, in the scientific sense of that term, and from its actual circulating money, and the connecting of the fund thus separated and ascertained with the phenomena of interest and monetary pressure, appear to us to constitute a cardinal discovery in monetary science, without which the most common occurrences of the markets for commodities or for money are wholly inexplicable, and which, we think, has not yet been turned, even by Mr Tooke himself, to full account.

Unfortunately, however, as not unfrequently happens with

¹ Mr Tooke's views may be collected from various passages throughout his great work on "Prices." We would, however, with a view to the present question, refer the reader more particularly to a small volume published in 1826, entitled, "Considerations on the State of the Currency," in which the causes determining the rate of interest are investigated with a sagacity, guided by a combination of scientific and practical knowledge, which we do not think has been surpassed by Mr Tooke in any of his later productions, and certainly by no other writer on monetary questions with whose works we are acquainted.

original minds, Mr Tooke has not been as happy in framing his nomenclature, as he has been sagacious in discerning the distinctions in things according to which it should be applied. It is evident, that the term "capital" is, in the passages we have quoted, employed in a sense wholly distinct from that in which we have hitherto considered it. It is used to denote, not the immediate materials of production as distinguished from the medium of exchange, but a particular portion of the medium of exchange itself,—that portion, namely, which is held in reserve, and is disposable on loan. We have no doubt that this employment of the term "capital" (for the qualification of "monied" is soon dropped and lost sight of) in currency discussions, to designate that which is not "capital," but "money," is the main source of that confusion between "capital" and "currency," which is the bane of monetary controversies, tending, as the verbal confusion inevitably does, to suggest and perpetuate the confusion of ideas. We are quite aware that this use of language may be supported by several analogies:—capital is the result of saving, and the Loan Fund of the country, constitutes the most obvious and tangible portion of its savings:—capital is productive of profit, and money lent on securities is productive of interest, which is commonly regarded as net profit. It is true, also, that Mr Tooke may find authority for it in the corresponding expression, "*capitula disponibles*," of M. Say. Nevertheless, in all its essential attributes, the Loan Fund of the country is "money," and not "capital," in the sense in which it is most desirable that these two terms should be discriminated; it is a part of the circulating medium, differing no doubt in many important circumstances from money in actual circulation, but still serviceable only as an instrument of exchange, and, *except in this capacity*, wholly destitute of the qualities of productive capital.

The notion, however, that the "monied capital" of the country—the fund which is lent and borrowed—if not identical or co-extensive with the actual material employed in industrial operations, stands, at least, in some constant and immutable relation to this productive fund, constituting, in some sense, the measure of the country's productive ability, has so infected all the most received modes of thinking, in connection with commercial matters, and has so impressed itself on our whole monetary vocabulary, that we shall make no apology for examining it at some length.

The writer, whose views on currency have been most seriously warped by this illusion, appears to us to be Mr Wilson. Throughout almost every page in his work on "Capital and Currency," the assumption, in one form or other, presents itself, that capital, in the sense of commodities, and capital, in the sense of dispo-

able reserves of money, are but different expressions of the same facts, so much so, that the identification of these two ideas may be taken as the fundamental principle of all that is peculiar in Mr Wilson's views. "The process of an increase of deposits in the Bank" (p. 218), he tells us, "would always infer a great increase of deposits in the stock of other commodities beforehand; that is, in short, a general abundance of capital." . . . "When, therefore, the deposits in the Bank are increasing, it would be an evidence of a great abundance of those commodities which constitute the floating capital of the country, and, when they were decreasing, it would be an evidence of the great scarcity of such commodities." The whole drift of the work to which we have alluded, consists in the application of these principles to the interpretation of the monetary phenomena of 1847. Thus, Mr Wilson shows, and shows with truth, that the effect of the great railway expenditure of that time, was to convert "floating capital" into fixed;—commodities, in short, into earthworks; thus tending to reduce the stocks of the former. He shows also, that the failure of the potato crop and of the other principal crops, over a large portion of Europe, operated still more powerfully to the diminution of the same stocks; and having established this point, he at once connects it with the deficiency of banking accommodation, the high rate of interest, and the difficulties of the money market; he at once assumes that the deficiency of disposable money was merely the consequence and symptom of the scarcity of commodities. "It is not a question," he says emphatically, "of deficient currency, it is a question *only* of deficient *capital*, or, in other words, commodities, and anything that does not increase the quantity of commodities can be of no use whatever.¹

However widely Lord Overstone and Mr Wilson may differ, it would seem that, in their view of the causes of monetary pressure, they are at one; though, we must say, it appears to us, Lord Overstone has the advantage in point of consistency. If a demand for money be but a transferred demand for commodities—if fluctuations in the Bank reserves be but the monetary expression of fluctuations in the supplies of commodities—we are at a loss to see on what Mr Wilson's objections to the Act of '44 rest, or in what way he connects the power of extending the issue of notes with the relief of the money market.

There can be no doubt that the circumstances of the year 1847 were such as to give considerable support to the theory of

¹ Of no use whatever to those who were in want of commodities—the starving multitude; but, by no means necessarily of no use to those who were in want, not of commodities, but of money to pay their debts, or of credit to allow them to stand over, as the suspension of the Bank Charter Act in the October following very fully proved.

Mr Wilson; and we cannot but think that his views, if not originally suggested, were at least confirmed into their present strength of conviction, by too exclusive a contemplation of the peculiar events of that year. There certainly existed then, owing to the causes pointed out by Mr Wilson, a great scarcity of some of the principal commodities, as well of general consumption as of the raw materials of our industry; and it is equally certain that this scarcity coincided with an unusually high rate of interest and monetary pressure; and, not only this, but that the railway speculation and the failure in the harvests, which led to the scarcity, were also the occasion out of which our monetary difficulties sprung. Looking, therefore, to the facts of that year, it was *aby* no means unnatural, though certainly a hasty and unwarrantable, conclusion, that a high rate of interest, was only the monetary symbol for real scarcity. In fact, however, the connection between the two things was purely accidental, and any state of circumstances which should have led to money engagements beyond the means of meeting them in money, would have been followed by precisely similar results. If, *e.g.*, we were to suppose that the short harvest of that year had *not* been supplemented by increased importations, while the scarcity of commodities would have been far greater, the pressure on the money market would have been far less—we should, in short, have exchanged bankruptcy for starvation; and, on the other hand, had speculation in commodities been more extensive, the money pressure would have been aggravated exactly in proportion as the dearth of commodities was mitigated. Or, to take a real case, had Mr Wilson tried his theory by the crisis of 1826, he would have seen how little there was of a constant connection between scarcity of commodities and scarcity of money. In the end of 1825, at the period when, according to the oft-quoted remark, the country was “within a few hours of barter,” all the elements of “floating capital”—of those commodities on the supply of which, according to Mr Wilson, the state of the money market depends—were *abounding* in all the markets of the country. Mr Wilson refers to the returns given by Mr Tooke of the state of the supplies in that year; from which it appears that the stocks of all the principal commodities—of cotton, flax, wool, silk, dyes, quicksilver, of all the raw materials of industry—were nearly fifty per cent. greater than in either the preceding or following year, the maximum having been reached just about the time when the pressure was most intense. And, in the case of the late American crisis, to which we have already referred, we find a state of facts very similar—commercial circles convulsed with panic, while the country was *abounding* with all the elements of real wealth.

And if no constant relation can be made out between the supply of loans and the supply of capital, equally impossible is it to establish any such connection between the demand for these two things. A demand for capital will, no doubt, operate upon the Loan Fund, assuming that effect be given to it through the medium of a loan; but equally so will a demand for fireworks, or a demand for champagne, upon the same supposition. The moment borrowers for unproductive purposes enter into the competition, the demand for money on loan ceases to represent exclusively a demand for capital, and the fluctuations in the rate of interest no longer afford a correct indication of the latter demand. Now, not to refer to the case of improvident persons who have recourse to the loan market to defray the charges of past or future extravagance, and who perhaps, in the aggregate, constitute a not inconsiderable class, we need only allude to the case of Government loans, to show the magnitude (whether in point of duration or of extent) of the demand for loans which occasionally arises for purely unproductive objects. We say purely unproductive objects, having in view the objects for which Government loans are most commonly raised, though quite aware that, as in the case of Australia at present, there are sometimes exceptions to the ordinary practice. So deeply, however, has verbal ambiguity tainted our whole language upon this subject, that the operations of Government upon the loan market are invariably spoken of as "draughts on the capital of the country." Now, to show the total confusion of ideas which this mode of speaking implies, let us consider what the process is which takes place when Government borrows money, say to carry on a war. Is it not simply this, that in return for certain considerations, Government obtain a command of money, or purchasing power of some kind, which they spend in the purchase of ammunition and other warlike materials? If, then, Government demand be a demand for "capital," either money is capital, in which case the distinction between capital and currency vanishes, or the ammunition and materials of war, on which the money is spent, are capital, in which case the expenditure before Sebastopol must be placed in the same economic category—as having the same effect on the wealth of the world—as that of the farmer of Illinois or the cotton-spinner of Manchester—in short, according to this view of the case, the distinction between productive and unproductive wealth, the most fundamental in the whole science of political economy, at once disappears. What has probably given support to the common notion is the fact, as all have felt, that the direct tendency

only be effected by obtaining possession of the fund in question, and bodily destroying it. The fact is, however, that the diminution of capital consequent upon such operations, arises, not from the unproductive consumption of it in war (for it would be no longer "capital" if it were unproductively consumed), but from the falling off in the demand for it. The elements of capital, like all other items of wealth, are produced in proportion as they are required. In time of war, a portion of the purchasing power of the community is, through the medium of a loan, transferred from merchants and manufacturers to Government; the demand for the ingredients of capital falls off, and that for the materials of war takes its place, the effect of which is that the latter articles are produced in place of the former. In this indirect manner, war may be said to be a great destroyer of capital, just as extravagant expenditure of any kind may be so described; but this is not owing to an increased demand for capital created by Government loans, but to a cause the very opposite of this. Still more to our immediate purpose is it to remark that, with respect to the fluctuations in the rate of interest which characterize times like the present, the theory, which supposes a correspondence between the desire to obtain money and the desire to obtain capital, utterly breaks down. That cannot be a demand for capital which is not to be satisfied by the possession of capital; and that the pressure for money in times of commercial difficulty, is not to be so satisfied, is sufficiently proved by the most characteristic and conspicuous feature of all such periods—the fall in price of all the principal elements of capital, proving, as it unequivocally does, the prevailing tendency to part with capital in order to obtain money.

We consider it, therefore, as proved that the rate of interest has no constant or immutable connection with "the value of capital," but is the exponent simply of the wants of the community in relation to money disposable on loan. Our power, therefore, over the rate of interest, and by consequence our ability to control the movements of the money market, will depend upon our power over the fund of disposable money. It is at this point of our argument that we come into collision with the class of writers, who advocate, under various forms, an inconvertible currency, of which class we may take Mr M'Phin as a plausible, and withal moderate, representative.

So long as our currency rests upon a metallic basis, and every engagement is in the last resort resolvable into certain definite quantities of the precious metals, it is evident that our control over the loan fund is, from the nature of the case, limited. This being so, Mr M'Phin, who traces all our commercial derangements to fluctuations in the rate of interest, proposes to get rid of these

evils by summarily dealing with their cause, and for this purpose recommends the adoption by the country of a currency on an inconvertible basis.¹

The essential requisites of a good system of currency, according to Mr M'Phin, are, that it should always be adequate to the wants of trade, and never more than adequate. Both these conditions he proposes to satisfy in his system, by a twofold arrangement, by which, on the one hand, he provides that any amount of inconvertible paper money required shall be obtainable from a State Bank or Paper Mint, on the security of Government stock, at a moderate rate of interest; and, on the other, that any amount of "redundant currency" shall be received by the same institution, also at a moderate rate of interest. A currency, based upon these principles, would be a "self-regulating" currency—"a system which would regard money in its true light, not as a thing whose abundance is to be regarded as a national blessing, whose scarcity is to be regarded as a national calamity, but as a thing to be provided exactly in such quantity as may be necessary to admit of its rightly discharging the function it is designed to serve, and which would regard any deviation from that exact supply as utterly discreditable to the institution in whose management it should originate."

Into the numerous details of the mechanism of the proposed arrangements it is not our purpose to inquire. The peculiar and original feature of the plan is that which provides for the absorption, through the attraction of a sufficiently high rate of interest, of all the "redundant currency" of the country. Not only is money provided in any quantity required at a moderate rate of interest, but a moderate rate of interest is also provided on any quantity of money seeking investment. The latter part of the arrangement Mr M'Phin considers as the necessary corrective and proper complement of the former; provided, only, this absorbent apparatus be kept in operation, it is impossible to issue money in

¹ It is proper to state that Mr M'Phin's work, in addition to the "self-regulating" system which we have examined in the text, contains an outline of a provisional scheme, founded upon a principle of convertibility, in order to propitiate the prejudices of the public, who require "that a pound-note shall represent a certain quantity of gold," until they are ripe for the more strictly scientific plan. The proposition is, that a scale of convertibility be established, in conformity with which an ounce of gold, when turned into notes, is made to represent sums of currency varying from £3, 15s. 6d. up to £10, in proportion to the stock of gold in the treasury of the bank; or, what comes to the same thing, according to which a £1 note may exchange for any sum in coin between a guinea and 7s. 6d., as the bank may find it convenient to pay its debts, or the contrary. As we scarcely think that this will meet the prejudice, which requires "that a pound-note should represent a certain quantity of gold," we have not thought it necessary to examine the scheme further. We can only say, that we fervently join in Mr M'Phin's trust, "that, for the sake of the credit of British intelligence in the second half of the nineteenth century, no such alteration may be deemed necessary."

excess; any Government may be trusted, without danger of depreciation, with an uncontrolled prerogative of issuing inconvertible paper notes.¹

Before proceeding to discuss the character of this arrangement, we would ask the reader to contemplate, for a moment, the dimensions of the undertaking with which Mr M'Phin here charges himself. Under our present monetary régime, when a period of prosperous commerce has generated a supply of available purchasing power greater than the owners can themselves employ with profit, or find borrowers for at what they consider a sufficiently remunerative rate of interest (which, to avoid a frequent periphrasis, we shall call 4 per cent.), the currency, in the language of Mr M'Phin, becomes "redundant," the rate of interest falls below the minimum point that is desirable, and the disinclination of people to be satisfied with such slender returns, induces them to look abroad for more lucrative investments. Under this stimulus large sums are exported to foreign states, and are either embarked in imprudent speculations and lost, in which case the interest on them ceases, or are applied successfully to the development of the resources of the countries to which they are sent, in which case the returns upon them are drawn from the resources of those countries, and constitute an unpaid-for addition to the imports of Great Britain. In this way, as the accumulations of realised wealth expand beyond what can find profitable employment within the bounds of this country, the excess overflows into other regions, the productive resources of which have not been strained to the same point. Other quarters of the world—as India, Canada, Australia, the West Indies, and those parts of the continent of Europe into which British capital has found its way, are thus, as it were, laid under contribution for our benefit; and the inhabitants of these islands enjoy a revenue altogether beyond what could be produced within their own narrow confines.

Now, when Mr M'Phin proposes to absorb all the surplus funds of the country seeking investment, and to pay upon them such a moderate rate of interest as shall satisfy their owners and deter them from hazardous speculation, what he undertakes to do is really no less than this—to supply a revenue at this rate upon all possible accumulations of money-capital—to divert all that portion of the purchasing power of the country which goes abroad to derive its remuneration from the resources of foreign lands into a national bank, to be remunerated by an annual issue of paper money. Now, we are far from questioning the ability of the proposed bank to pay 4 per cent. (or any other rate that may be decided upon) in inconvertible notes

¹ "True Principles of Currency." Question 19.

on any amount of surplus funds that may be lodged with it; but, if the revenue derived from these notes is to represent a real revenue—if the scheme is not to be a delusion and a mockery—some provision must be made for a corresponding augmentation of the real income of the country, consisting of things fit for human use—food, clothing, shelter, the conveniences and comforts of life—as distinguished from bits of inconvertible paper. We do not find that Mr M'Phin's scheme, with all its ingenuity, makes any provision for *this*. The only productive agents which his arrangement involves are a paper mill and a note stamp. If, indeed, he held, with the author of "The Theory and Practice of Banking," that currency was "the moving power of commerce," he might consistently conclude that the real revenue would follow the paper revenue, as the fruits of the earth follow the fertilizing shower, and that, therefore, in providing for the augmentation of the currency, he did all that was necessary. But Mr M'Phin has not so learned political economy. He takes a more scientific view of the functions of currency, rightly regarding it as constituting, not the "moving power," but only the circulating medium of commerce. We must, therefore, ask him, where is the real revenue to come from that is to support this issue of paper?¹ Not only is there no provision made for an increase of productive operations within the country, but there is positive provision made for their diminution. The reason money goes abroad now is, because, even at the low rates which occasionally prevail, home producers cannot be tempted to borrow; it is quite certain, therefore, that they will not borrow if the rate be maintained at a higher point; on the contrary, some will be deterred from borrowing for productive purposes, under Mr M'Phin's régime, who, under the present system, would become borrowers. It follows, therefore, that the self-regulating principle, so far from providing for any extension in the real

¹ Mr M'Phin seems to be under the impression [Question 96 in his Pamphlet], that, as the currency, according to his scheme, is to be issued on security of stock, the interest on the return currency would be provided for by the stock originally lodged against it; and that, therefore, no increase of nominal revenue could take place. But here he entirely overlooks the notes issued in payment of this interest, as well as in payment of the Government dividends generally. He does not state whether he intends that faith should be kept with the national creditor, or whether he should be paid in the new inconvertible money; but, in either case, the notes thus coming periodically into the hands of the public, would constitute a new source of accumulation and saving, altogether independent of the issue which would take place against stock. Now, when the notes thus coming into circulation flow back to the bank, as they soon would, in the form of "redundant currency," the plan provides that, say 4 per cent. interest be paid on these, to whatever extent lodgments may take place. Here, then, is an increase in the nominal revenue of the country, but where is the real revenue to support it? The plan (supposing it to be fairly carried out) would simply be equivalent to an indefinite increase of the national debt, the dividends to be paid in inconvertible notes, without any corresponding increase of taxation.

revenue of the country to support the expansion in its nominal revenue, offers, on the contrary, a positive discouragement to productive operations.

But, in truth, we may go further than this. An augmentation of real revenue at the rate required would in no long time involve a physical impossibility. Mr M'Phin proposes, by the temptation of a moderate rate of interest, to absorb all the superabundant funds, which, under the existing system, are either lost in hazardous speculation, or pass off to foreign countries, or are swept away in times of commercial crisis. If we suppose the scheme to have been in operation for the last fifty years, and as successful as its author contemplates, all such funds would be now within the country, yielding a nominal revenue, paid in inconvertible notes out of the National Bank. It is not, perhaps, too much to say, that under the circumstances supposed, the nominal revenue of the country would now be doubled; and if the currency is not to be depreciated, a corresponding duplication must take place in its real revenue. Now, in order that this should be possible, assuming industrial skill and knowledge to be the same as at present, the number of productive labourers should be proportionately increased; and so should the quantity of food consumed within the country. Has Mr M'Phin contemplated the conditions which this aspect of the case involves? The price of corn has within the last five years ranged between sixty shillings and eighty shillings the quarter. If the consumption of the country were double its present quantity, what would be the price? The rate of wages would be either the same as at present, or less, or greater. On the latter supposition, the conditions of productive industry being in other respects the same, what would become of profits?—on either of the former, how are the labourers to be fed? May it not well be questioned, if, with such a demand, the whole wages fund applied exclusively to the purchase of food would be sufficient to keep the labouring population from starvation,—much less in their present working order? We say, therefore, that Mr M'Phin's system, except on the hypothesis of indefinite depreciation, involves a physical impossibility. Other plans for inconvertible currencies which we have seen fail to provide security against depreciation; Mr M'Phin's is singular in making effectual provision to ensure it. It is idle for Mr M'Phin to rail at political economy: he is only kicking against the pricks. To render his scheme successful, he must get rid, not alone of political economy, but of the moral and physical conditions under which we live.

But to return to the general question. Our examination of one aspect of this problem led us to the conclusion that the rate of interest has no constant and immutable connection with the

value of capital. The discussion of Mr M'Phin's project has, we think, brought out with equal clearness the truth, that, although not bound together by any constant and immutable connection, there is, nevertheless, between the rate of interest and the value of capital a fundamental and indissoluble tie. The nature of this connection it is not difficult to perceive. Since money does not breed money, it is plain that interest can only be paid either by drawing upon wealth already in existence, or by applying the money borrowed, through the purchase of capital, to the production of new wealth. The former process is obviously one which must soon exhaust itself; for the permanent payment of interest, therefore, the only fund available is that which is furnished by the returns upon capital. It follows from this, that, when taken over long periods, the rate of interest must necessarily be limited by the productiveness of capital; and, further, since "more will be given for the use of money, when more can be made with money," it is plain that the rate of interest will constantly gravitate towards the profits upon capital. Subject, however, to these influences, and restrained within these limits, any cause affecting the supply of, and demand for, money, whether connected with the movements of productive capital or not, will equally affect the rate of interest. There is, therefore, no constant correspondence between the phenomena of interest and profit, while, for short periods, they may fluctuate altogether irrespective of each other, and even, for a time, in opposite directions; the rate of interest, in times of monetary difficulty, being subject to no other limit than the utmost means of the borrower. Hence we may perceive, on the one hand, the fallacy of the doctrine which regards the rate of interest as a criterion of "the value of capital;" and, on the other—seeing its ultimate dependence on the productive powers of capital—the necessary futility of all attempts permanently to regulate it.

Having arrived, then, at this point, it remains that we should apply the principles we have obtained to the problem of dealing with a season of commercial difficulty; and since, as we have shown, the demand and supply of the community in relation to its disposable money are at all times the proximate causes of the phenomenon in question, what we must direct our attention to is the mode in which a derangement of our credit system acts upon this fund, creating those conditions of monetary pressure and inability to meet engagements, which constitute a commercial crisis. When we have correctly apprehended the nature of this process, we shall be in a position to pronounce how far currency regulations may be efficacious in mitigating or aggravating the evils of such a time.

The circulating medium of a great commercial country like

ours may be regarded as consisting of a series of monetary layers or strata, commencing with the most simple forms of book credit, and passing downwards through various descriptions of credit media, consisting of bills of exchange, cheques, bank post-bills, bank notes—the whole finally resting on a primary substratum of gold. The different instruments of credit, though all alike instruments of exchange, and capable of being used either as purchasing or paying power, and though all alike subject, in the last resort, to the metallic test of convertibility, nevertheless represent very different kinds of security ; and, consequently, the extent to which any of them is employed in conducting business will vary with the state of confidence generally prevailing.

In ordinary times of good credit, by far the largest proportion of the business of the country is transacted through the medium of the less secure, but more convenient, forms of credit instruments, such as book-credit, bills, and cheques, the balance only upon large aggregates of transactions passing in bank notes, exchequer-bills, or coin ; but when over-trading or any other circumstance occurs involving the commercial community in engagements beyond their immediate or ultimate means of liquidation, and thus generating distrust, the disposition becomes general to pass from the superficial to the lower and more secure strata of credit, and, by a movement towards the basis of the system, to reach more solid ground. The lighter forms of credit media then fall into discredit ; and, in order to supply their place, a demand arises for the more substantial kinds—for bank notes, in proportion to the degree of security which they possess, or, for what in the last resort constitutes the support of the whole—the reserve of gold. The demand thus generated is the immediate cause of monetary pressure ; and the intensity of the strain which supervenes, will depend, on the one hand, on the intensity of the causes producing the demand, namely, the degree of distrust and alarm prevailing, and, on the other, on the means available for satisfying it ; these means consisting of such forms of credit as have not fallen under suspicion, and of the disposable gold reserve.

In determining, therefore, the character of any given regulation of the currency with respect to its operation in a season of commercial difficulty, it is to these points that we must direct our attention :—*1st*, We must inquire, whether the law has any tendency to increase the alarm beyond what the occasion requires ; *2dly*, we must consider its influence upon the support which credit gives to credit in such times ; and, *3dly*, we must look to its influence on the reserve of gold. We propose, therefore, to examine, under each of these aspects, the Bank Charter Act of 1844, which may be regarded as the basis of our present

currency system. It appears to us that, tried by these tests, that Act will stand condemned.

We have spoken of the alarm "which the occasion requires;" and this is an expression which needs explanation. It might seem, at first sight, sufficient to say, that alarm amongst commercial men is justifiable, when those who are the objects of it are unable to pay their debts, and groundless, and therefore unjustifiable, where they are able. But in this answer it is overlooked that the ability of a debtor to meet his engagements will depend very materially upon the state of confidence which happens to prevail. Every fresh extension of alarm gives a new impulse to the demand for monetary accommodation, thereby raising the value of the standard in which debts are estimated, and thus virtually augmenting the debts themselves. A man may be perfectly competent to meet his engagements in an inflated state of the markets, but a slight alarm supervening may so enhance the value of his debts as at once to render him insolvent; on the other hand, a man, under a tightness of the money market, may be incapable of meeting his liabilities, and so become insolvent, who, on the abatement of the panic, will be perfectly able to discharge all his debts in full.¹ It is plain, therefore, that to decide whether an alarm be justifiable or not, we must consider its effect in enhancing the value of the circulating medium; and the question then comes to this—At what point is it desirable that the value of the circulating medium should, in periods of discredit and alarm, be maintained?

Now, in determining this, we must remember that constancy of value is the first and most important quality in that which is the measure of value. It is for this that we resort to a metallic standard, and make all our contracts ultimately resolvable into certain definite quantities of the precious metals. If, therefore, fluctuations in the value of the circulating medium are desirable at all, it can only be in so far as such fluctuations are indispensable to the permanent maintenance of the standard itself. Under the circumstances, therefore, which we have supposed, the minimum of enhancement which is consistent with this end, is that which the occasion justifies; or, to put the same proposition in different words, what is desirable on such occasions is,

¹ This very obvious consideration has been wholly overlooked by the *Times*, in its reasoning upon this question. "When a firm," it is argued, "suspends, it must either have sufficient or insufficient assets to pay its creditors. . . . The value of these will be neither lessened nor increased by the fact of the possessor of them postponing payment of his own debts. . . . It is only an imaginary value that has been destroyed." The reader will observe the play upon the word "value." The utility of the articles, whatever they may be, may not be altered; but it is scarcely necessary to say, that their power of commanding money, and consequently of enabling their owners to discharge monetary obligations, will be altered by every change of the money market.

that the rate of interest should rise no higher, and that prices should fall no lower, than is sufficient to secure the *ultimate* rectification of the exchanges, and the *permanant* convertibility of the paper circulation. All beyond this is pure evil, productive of hardship and injustice to individuals, fraught with gratuitous suffering and disgrace to the community.

Using, then, the expression, "what the occasion justifies," in the sense explained, we think it is demonstrable, that the provision of the Act of 1844 which prescribes a fixed limit to the note issues is calculated to produce an unnecessary state of alarm, and, therefore, to cause an unjustifiable enhancement in the value of the circulating medium. The extravagant and unprecedented demand for accommodation in the autumn of 1847 up to the moment of the appearance of the Government letter suspending the Act, and the sudden cessation of the demand immediately on its appearance, are facts so familiar that we need only allude to them; while the maintenance of specie payments *after* its cessation, and the continuing favourableness of the foreign exchanges, proved how entirely unnecessary had been the artificial enhancement to which the money of the country had been subjected, for the attainment of either of those objects. During the year just past the same phenomena have been repeated. "Many merchants," says the editor of the city article of the *Times*, writing on the evening preceding the suspension, "in order to gratify an ignorant impulse of caution, have now at their bankers two or three times the amount they ordinarily keep. The reason they give is, 'that they don't know what may happen.'" A few days subsequently, it was announced in a leading article of the *Globe* (also a strong supporter of the present law), that one joint-stock bank in London had put itself in a position to pay L.5,000,000 in three days, if necessary; a fact "sufficient," the writer remarks, "to indicate the height which has been reached by the demand for 'the ready,' in mere anticipation or apprehension of panic."

Nor is it denied that this disposition on the part of the commercial public to supply themselves beyond their immediate needs is directly traceable to the restriction of the Act. The defence is, not that the act does not produce this factitious demand, but that *it ought not to do so*. It is "an ignorant impulse of caution,"—"a blind fright,"—"an insane panic." It seems a sufficient answer to this to say, that, whether a proof of folly or of wisdom, such is the constitution of human nature, the act *does* produce this effect. In truth, however, so far from being the foolish thing it is represented, the measure is but a natural and proper precaution which no prudent man would on such occasions omit; and, considering the contingency to be encoun-

tered—with safety and ruin, honour and disgrace, trembling in the balance—to expect that men will confine their requirements within what is immediately necessary,—to expect that they will not make provision against every emergency, to the utmost of their power, while provision is possible, appears to us to be the merest childishness and fatuity, unworthy of men who aspire to legislate for a great commercial people.

Such is the operation of the Act in respect to the demand for monetary accommodation: we have now to consider its effect upon the supply. And this question, as we have intimated, resolves itself into two others, viz.—first, as to its effect upon those kinds of credit media—namely, bank notes—upon which the demand is chiefly turned in times of difficulty; and, secondly, as to its effect upon the reserve of gold.

* In dealing with the first of these, we are brought into direct collision with what is considered the fundamental principle of the Act, which, therefore, we must briefly examine.

The principle of the Act of 1844, as expounded by its authors and defenders, may be stated shortly thus. It takes, as the type of a perfect currency, a currency having the constancy of value of a metallic one accompanied with the facilities of transmission and other conveniences afforded by a paper circulation; and since, as is alleged, the value of a currency varies inversely as its quantity, those who adopt this theory conceive that this degree of perfection is attainable by simply making a paper circulation fluctuate in amount as a metallic currency would. Proceeding from these premises, and taking bank notes as constituting the class, “currency,” they have contrived an arrangement, embodied in the Act of 1844, by which bank notes are made to fluctuate in amount with the influx and efflux of bullion to and from the Bank. By adherence to this principle, which they designate as the “principle of metallic variation,”¹ it is maintained that we secure for the country a perfect currency, which unites the advantages of a metallic with those of a paper system, and avoids the inconveniences of both.

Such is the theory:—on which we have, in the first place, to observe, that the assumption of the value of a currency varying inversely as its quantity, is only true when we include under the term, “currency,” every possible species of purchasing power. Now, in the application of the principle, bank notes only are included under this term. Consequently, it by no means follows, that by regulating the quantity of bank notes you regulate their value; and, in point of fact, no one circumstance is better established than this, that extraordinary fluctuations in prices, and consequently in the value of the currency, have taken place

¹ Peel's Act of 1844 Explained and Defended. R. Torrens, Esq., F.R.S.

without any corresponding fluctuations in the amount of the bank note circulation, whether we confine that term to notes in the hands of the public, or include under it also the notes in the tills of bankers. Any order given by a person in good credit will affect prices just as much as if an actual transfer of sovereigns took place. Now, whatever affects prices, affects the purchasing power or value of the whole circulating medium—of notes and gold as much as of bills, cheques, or any other part of it. The attempt, therefore, to regulate the value of the currency by placing a limitation on the quantity of bank notes is much as if one were to proceed to regulate the level of the ocean by damming up a single river. Indeed, so much does the influence of credit upon prices obtrude itself on our notice in all the transactions of commerce, that we cannot suppose a phenomenon, so patent and striking, to have escaped the authors of the theory in question. What seems to be assumed (for it has not been expressly stated) is, that, amongst the various forms of paper credit, bank notes occupy a position of superiority, not simply in point of security and of convenience for certain purposes, but in respect to a paramount influence which they are supposed to exercise over all other kinds of circulating medium, so that, if *they* only be controlled, the control of the whole circulation will necessarily follow; and, accordingly, the term "currency," or "money," is supposed to be applied with peculiar propriety to bank notes, but to be wholly inapplicable to every other kind of credit media; these being, it is said, merely *substitutes* for "currency." Into the verbal question we have no desire to enter; but with respect to the assumption that bank notes have any peculiar influence upon prices, or that they stand in any constant relation to the general medium of circulation, and that therefore a regulation of them will control the fluctuations of prices, or restrain the expansions of credit, these assumptions have been so often and so effectually disposed of, that we should regard it as a mere waste of argument to add a single word in support of a refutation already more than complete.¹

If any one will consider the question apart from any particular theory, we think he cannot fail to perceive that bank notes differ from other forms of paper credit in these two circumstances, and

¹ If the reader wishes to see the question discussed at length, he will find it treated in various places throughout the fourth volume of the "History of Prices," with Mr Tooke's usual discernment. And should he care to see what is to be said on the other side, he may look to the opening chapters of Colonel Torrens' work in defence of the Act of 1844 (last edition). We may also refer the reader to Mr Macleod's work on the "Elements of Political Economy," just published, in which he will find the whole mechanism of our credit system taken asunder, and explained down to its minutest details, in a manner evincing a knowledge of commercial transactions as accurate as it is extensive.

in these only :—viz., *1st*, in point of security, representing as they generally do the credit of great corporations, while other kinds of paper credit represent, for the most part, merely the credit of private persons, whose ability to pay, even if it be as certain, is at least less notorious than that of banks; and *2dly*, they differ in point of convenience; bank notes standing in much the same relation to credit in general as coin does to bullion, and thus constituting what Mr Mill has happily designated “coined credit.”

Now regarding bank notes, under this aspect, as constituting a portion of the general credit system of the country, differing from the rest in point of greater security and availability for general purposes, the question comes to this,—What will be the effect upon the whole system of placing this portion of it under the law of “metallic variation?” Will it conduce to the stability of the fabric? or to that uniformity and equableness in the standard of value, which must be taken as the ultimate end of all currency regulations?

We have no hesitation in saying, that it tends to produce directly opposite results.

In times of good credit, when trade proceeds in its normal course, the law restricting the issue of bank notes is simply inoperative. If this were ever doubtful, he, whose eyes have not been opened to the truth by recent disclosures, must be judicially blinded. So far from the Act of 1844 imposing that restraint on over-trading, which, at least with its author, was the principal advantage expected from it, it has now been demonstrated by the unerring test of experience, that the most reckless and unscrupulous speculation may be indulged under this metallic régime without let or inconvenience. And we believe we might illustrate this statement by the experience of America, as well as by our own; for, although no law of “metallic variation” has been in force in that country, in point of fact the relation of the note circulation to the bullion, so far as the returns have reached us, has never exceeded that which the principle in question would permit.¹ The fact is, that in times of commercial confidence, the vast bulk of transactions is carried on through the medium of the inferior instruments of credit; the accommodation which banks afford in such times consisting, in by far the greater proportion, of credit advances in which no notes pass. The restriction on the issue of notes is, in such times—that is to say, in ordinary times—as much a dead letter as a law which should enact that no man should eat more than one quartern loaf at a sitting, or wear more than one suit of clothes at the same time. It is when some derangement occurs in the course of commercial dealings, generating suspicion and distrust, that the law for the

¹ Vide *Economist*, Dec. 26th 1857, article on the American Crisis.

first time comes into operation, and then the restraint begins to be felt; the point at which the pressure discovers itself being in the obstruction which the Act offers to the natural movements of credit in support of credit,—of the stronger in aid of the weaker sorts,—a process indispensable to the stability of our highly artificial and mutually interdependent system, without which the complex structure must in a moment be resolved into its original elements.

In order to understand the extent to which our commercial operations are dependent upon opinion and confidence, we have only to consider what the consequence would be if every person were to require, as every one has always a perfect legal right to do, that all debts payable to him on demand should be at once paid, according to their amount, in gold or silver. It is evident that compliance would involve a physical impossibility. So utterly insufficient is the metallic basis of the currency to sustain, by its own strength, the superstructure which is raised upon it, that the whole fabric of commercial credit must, under such a pressure, instantaneously collapse, and universal bankruptcy would necessarily follow. Now, in times of commercial disturbance, when, as far as regards private credit, this impulse of distrust operates to a very considerable degree, the catastrophe, which would otherwise be inevitable, is prevented by the support which the more solid strata of credit lend to the more superficial descriptions which fall under suspicion. The question, then, which here arises is,—How far should this process of sustaining private credit, in such times, by banking accommodation be carried? It appears to us, that the limits which justice and expediency prescribe, are those which are set by the two following considerations: viz., *1st*, the necessity of securing the circulation against depreciation—in other words, of maintaining specie payments; and *2dly*, the solvency of the persons applying for assistance.

Now, with regard to the first object, it has indeed been very freely asserted, that the principle “of metallic variation”—of making bank notes vary in amount with the movements of bullion—is indispensable to its effectual accomplishment; but, as we conceive, without the slightest foundation in either reason or experience—indeed, in direct contravention of both. Specie payments may be endangered by either of two causes—by a foreign, or by a domestic drain of gold. In meeting a foreign drain, we believe it is now admitted upon all hands, that the true remedy is a rise in the rate of interest. Now, be it observed, that there is nothing in the law of 1844 to compel a rise in the rate of interest at any period of a foreign drain; its effect is not to secure that the drain shall be met by a timely adoption of the only measure by which it can effectually be met, but, through the separation of the departments of the Bank of England, to narrow the avail-

able means of meeting it. The consequence is, that the maintenance of specie payments under the Act requires that the rate shall be raised much more suddenly and violently than would otherwise be necessary. Thus, by the operation of the Act, the difficulty of the problem is increased, without any precautions being taken that the conditions which the augmented difficulty demands shall be complied with. *Now*, as, previous to 1844, the discretion of the Bank directors is the *sole* guarantee for a timely rise in the rate of interest; the only difference made by the Act is in the narrowness of the available reserve on which the drain has to operate—we say *available* reserve, because it is only a portion of the aggregate bullion that, under the Act, is really available. The operation of the Bank Act, therefore, with respect to the maintenance of specie payments under a foreign drain, being *simply to enhance the difficulty of the problem*, it must be said rather to endanger than to secure the desired end—a tendency which was very clearly indicated on the occasion of its first trial in the early part of 1847, when the directors keeping down the rate of interest in the face of a foreign drain, the Bank was brought to the verge of suspension, from which it was only saved by having recourse to the most violent measures, involving great public inconvenience.

The rate of interest, then, constituting the effective engine for counteracting a foreign drain, and the point to which it is advanced being determined by the discretion of the directors of the Bank of England, having reference to the state of the available reserve and the circumstances producing the drain, the question is, assuming the advance to be pushed to the requisite point, what should be the limit to the amount of banking accommodation which should be given *at this rate*? We submit, that the sole limit which justice, expediency, and the public weal require, is that which is set by the solvency of the applicants. This limit the special knowledge of bankers enables them to discover; and as their private interest would induce them to comply with such demands up to the point of solvency, so it would prevent them from passing beyond it. But here the Act of 1844 interposes; and, substituting for that play of individual interests by which, in this as in other instances, the public good is surely brought about, its principle of “metallic variation” interdicts the Bank from the discharge of a useful public function, by placing an arbitrary limit on the quantum of accommodation to be given—a limit, not determined by consideration of the causes producing the drain, nor by the favourable or adverse condition of the foreign exchanges, nor by the solvency or insolvency of the applicants for assistance, but by a pedantic *dictum*, founded upon a radical misconception of the character of a convertible paper system, and unknown to all the first authorities in economic science.

So far with respect to the operation of the principle in the case of a foreign drain. In the case of a drain proceeding from a domestic panic, its effect is still more mischievous and absurd. As we have already remarked, the metallic basis of our credit system is wholly insufficient to sustain, by its own strength, the superstructure raised upon it; consequently, if distrust of our ordinary paper circulation once fairly sets in, our only means of averting general bankruptcy is through the support which, under these circumstances, the more solid instruments of credit, represented by bank notes, bring to the weaker kinds which are wantonly endangered. But this—the only means physically available for obviating the impending crash—the Act of 1844 places under interdict; so that, as has happened on the only two occasions on which the principle has been tried, and as will infallibly happen whenever it is tried again, the country and the Government are placed in this dilemma, that either the law must be broken, or specie payments generally must be suspended. Nor did we require the experience of 1847 and 1857 to have taught us this lesson. It was written in characters sufficiently legible in the history of former crises. On every occasion on which specie payments have been endangered through domestic panic, the remedy which has been ultimately resorted to, and which has invariably been found efficacious, has been an extension of accommodation in the form of the superior descriptions of credit instruments—generally of bank notes, sometimes of exchequer bills. There is, indeed, one remarkable exception. During the commercial panic of 1797, the Bank of England, instead of boldly extending their issues when satisfied of the solvency of the persons seeking assistance, *acted on the principle of the Act of 1844 by persisting in contracting them*; and the consequence was, that the Bank of England suspended specie payments. *Nec meus hic sermo est*; it is the verdict of the Bullion Committee of 1810. Referring to that catastrophe, the Committee says:—"An effectual remedy might have been provided, *if the Bank of England had had courage to extend, instead of restricting, its accommodation and issue of notes.* Some few persons were of this opinion at the time; and the late Governor and Deputy-Governor of the Bank stated to your Committee that they, and many of the directors, are now satisfied, from the experience of the year 1797, that *the diminution of their notes in that emergency increased the public distress; an opinion, in the correctness of which, your Committee entirely concur.*" And, not only were the Committee satisfied with the expediency of such a measure under the peculiar circumstances of the year 1797, but they further illustrate its expediency by the converse experiment furnished by the year 1793; the advance of exchequer bills in aid of the mercantile embarrassment upon this latter occasion.

affording, in the opinion of the Committee, "an important illustration of the principle, that *an enlarged accommodation is the true remedy for that occasional failure of confidence in the country districts, to which our system of paper credit is unavoidably liable.*" Nor are the Committee content with citing particular examples, they lay down general principles; and, distinguishing between the cases of foreign and domestic drain, they state that, with regard to the latter, the proper treatment is "*a judicious increase of accommodation to the country;*" while, in the case of a foreign drain, though other considerations must here be attended to, it is nevertheless "essential to the commercial interests of the country, and the general fulfilment of those mercantile engagements which a free issue of paper may have occasioned, that the accustomed degree of accommodation to merchants should not be suddenly or materially reduced; and that, if any general or serious difficulty or apprehension on this subject should arise, it may, in the judgment of your Committee, be counteracted without danger, and with advantage to the public, by *a liberality in the issue of Bank of England paper proportioned to the urgency of the occasion.*"

We might illustrate this point further; but recent experience, and the admissions of the supporters of the present law, render this unnecessary. The specific ground taken by the defenders of the Act of 1844, in their condemnation of its recent suspension, is, that *numbers have thereby been saved, who, according to their principles, should have been ruined, and would have been ruined had the law been enforced.* They even go so far as to complain that an invidious and unfair distinction has been drawn between those who have been crushed by the operation of the Act, and those who have escaped through its suspension: they would have dealt out impartial destruction to all.¹ Now, bearing in mind that specie payments have been maintained, that since the appearance of the Government letter the convertibility of the note has never been for a moment imperilled, that no insolvency has been averted by a departure from the standard of value, to what do such statements amount, if not to a distinct avowal that the operation of the Act of 1844 is calculated and is intended to produce *artificial* insolvency—insolvency indispensable, indeed, to the enforcement of its provisions, but uncalled for by any other consideration?

No doubt much unsound trading has been rife in many parts

¹ *Vide the Times' city articles passim, from the 12th of November up to the present.* The following is from Lord Overstone's speech on the opening of the session:—"If the Act had been maintained only twenty-four hours longer, the whole of the vicious system to which he had referred would have been got rid of by the crumbling to atoms of the institutions which fostered it. Irretrievable ruin would have followed, and the commercial atmosphere would have been cleared. But to prevent this, it was deemed necessary to interfere, and to suspend the operation of the Act."

of the kingdom ; no doubt we have had some flagrant examples of the fostering of unsound speculation by reckless and unscrupulous advances—examples, some of them, we regret to say, furnished by Scotland, now for the first time in the history of her banking institutions ; but as the mechanical regulation of bank notes has been powerless to prevent such abuses, so it is unnecessary to their exposure and punishment. One would imagine, from the language which has been freely used on this subject, that the sole security for all the debts in the kingdom was the Act of 1844 ; that if the principle of “ metallic variation ” were once abandoned any one might make himself liable to any amount, and find no difficulty in making good his obligations. People, it is said, engaged in all kinds of hazardous and imprudent speculations, “ because they foresaw that, when the pressure came, Government would step in to relieve them from the effects of their culpable folly.” But, in reply to all such declamatory mystification, the following answer will probably suffice :—The parties whom the Bank of England has been enabled to assist by the relaxation are either solvent or insolvent—they either have the means of ultimately making good their engagements, or they have not. If they have the means, then we ask on what ground is the Bank to be prevented from assisting them ?—unless, indeed, the object be to produce artificial insolvency. If they have not the means, then we should like to know on what grounds it is supposed that the Bank will comply with their demands ? Does the suspension of the Act place the Bank under compulsion to grant assistance to any one ? And if not, why is it to be supposed that the directors will suddenly take leave of their senses, and, in violation of every principle of sound banking, in disregard alike of their own interests and of their duty to their constituents, wantonly rush to the rescue of insolvent institutions, on the principle, we suppose, of the dog which,

“ To serve some private ends,
Went mad, and bit the man.”

But we have yet to notice the effect of the Bank Act of 1844 on that most influential element of the loan fund—the available reserve of gold. And here we regret that, having already exceeded our limits, we can do little more than advert to this most important aspect of the case.

The formula most in favour at present amongst the admirers of the existing law, and which seems to be regarded as a sufficient answer to all objections, is, that the Act of 1844 simply carries out the principle of “ free trade in gold.” We have certainly been under the impression that free trade in gold, including the exporting, importing, and melting of that metal, has

been secured by the law of the land since 1819; but if the Act of 1844 has conferred any further immunity from restraint on this trade, perhaps those who rest its defence on this ground will be good enough to point it out. Meanwhile, however, we are at a loss to see in what way "free trade in gold" is advanced by trammeling credit. If it should be said that credit, or any particular form of credit, being equally available with gold as a medium of exchange, the principles of free trade require that it should be made to vary in amount with this metal, we can only say that we are unable to see the application of the doctrine. Bread and meat are both alike conducive to the common purpose of sustaining human life. But it would surely be a strange misconception of the doctrine of free trade in corn, which should identify it with the regulation of the meat market, and proclaim it, as "a necessary complement" of the Act of 1846, that for every quarter of corn exported, a sheep should be put to death.

Free trade in gold—in the material of the money of England—was established by law in 1819. The Act of 1844, instead of further carrying out the principle then established, was in reality a retrograde movement, interfering, as it did, through the provision for the separation of departments, with the liberty of action of the Bank in dealing with its own bullion. This Act, which is said to have established free trade in gold, has thus introduced on the freedom of dealing with gold a new and unheard of restraint; it has interposed between the proprietor and his property, and, subjecting a portion of it to rules of its own, permits him the exercise of his discretion with the remaining part only.

The principle of cutting in two the metallic assets of the Bank, has now received a second practical illustration. Its operation is to render nugatory, for all practical purposes, a large portion of the Bank treasure; so that, under this system, the real measure of our ability to meet a foreign drain, or to support in times of alarm domestic credit, is not the total amount of our bullion, but only that portion of it which is represented by the coin and notes in the banking department. We have, accordingly, now, as in 1847, been once more brought to the end of our legally available means—to a point at which, but for the violation of the law, the Bank of England must have suspended payments—while there was yet L.7,000,000 of bullion under legislative lock and key. This is a contingency which does not appear to have entered into the speculations of the framers of the Act. Mr Tooke had the sagacity to foresee the consummation which was impending. In his pamphlet of 1844 he thus predicts, with a minute accuracy of description, the catastrophe which has a

Free Trade in Gold.

second time overtaken us : " In this case," he says, "*while the circulating department would still have L.6,000,000 of bullion, the deposit department would have no alternative but to stop payment ;—* a most absurd, however disastrous, state of things. But it would be too disastrous and too absurd to be allowed to take its course. If such a crisis were to happen, as most probably it will, at a time when the dividends on the public funds become due, *Government would be imperatively called upon to interfere, and prevent so ridiculous, however lamentable, a catastrophe ; and the only interference that would meet the emergency would be to authorise a temporary transfer of coin from the Issuing to the Banking Department.*"

Though, therefore, the Act of 1844, not only did not establish free trade in gold, but really imposed restrictions unknown before upon an important portion of our total stock, the framers and supporters of that measure may, nevertheless, fairly take credit for having contributed to the practical adoption of the principle in question, in dealing with the remaining portion. Previous to the passing of this law, the principle, however imperfectly acted upon, was generally recognised, that, in the management of its gold reserve, the Bank acted in some degree as a trustee for the public. It was seen that this reserve constituted, in the last resort, the basis of our system of credit, and that, therefore, its management was really a matter of public concern. Free trade in gold, therefore, though the law of the land, was not in practice fully carried out ; but no sooner had the principles of the present law prevailed, than it was announced that the management of the Bank reserve (or rather, of that portion of it which, under the Act, was available) was an affair of purely private concern, with which it was an impertinence in the public to interfere. " All that any of these parties have to do," said the *Times*, in replying to such criticisms in 1846, " is to take care of their own interests, and leave the currency, under Sir Robert Peel's Act, to take care of itself." Accordingly, from 1844 to 1847, this principle was generally acted on ; the directors looking simply to their dividends, and endeavouring to keep their reserve at the lowest practicable point. The difficulties of 1847, however, suddenly brought the doctrine to a somewhat rude trial ; and the result was as might have been anticipated. The public then perceived what, had they attended to the teaching of Mr Tooke, they might have learned without some of the painful experience of that year, that the management of the Bank reserve is a matter of public concern ; and, accordingly, a wholesome criticism has, since that time, been exercised upon the conduct of the Bank in this particular by the press in general, and not the less effectively by those organs who had previously deprecated

all such interference. A very sensible *practical* restraint on the freedom of trade in gold has thus been established, which has conduced in no small measure to neutralise the mischievous tendency of the lessons which the authors of the Bank Act had inculcated.

The principles of currency, therefore, embodied in the Act of 1844, whether in their violation, or in their observance of the doctrine of free trade in gold, tend equally to the same result—the reduction of the available bullion reserve to the smallest practicable amount; thus narrowing the basis of our credit system, and concurring, so far as such principles are really acted upon, to the instability of the super-imposed fabric.

Let us briefly recapitulate the points which have been established. It has been shown that the effect of the Act of 1844 is, in times of commercial derangement, to create an alarm beyond what the occasion warrants, causing a factitious demand for money—a demand proportioned, not to the wants of those who ask, but to the inability to comply with it of those who give, and, therefore, having almost a necessary tendency, when it reaches a certain point, to culminate in panic. It has been shown, secondly, that, while extending the demand for accommodation beyond what the real necessities of the community would produce, on the other hand, by interfering with the natural support which in such times credit would bring to credit, the Act curtails the supply in a greater degree than the conditions of maintaining specie payments require; each operation tending by a reciprocal action to the same result—a great artificial enhancement of the standard of value. Lastly, it has been shown, that, with respect to the metallic basis of our system, the effect of the present law, in proscribing for all practical purposes the use of a large portion of the bullion of the country, is to reduce within extremely narrow limits the really available gold reserve.

It thus appears that the operation of the Act of 1844 is unnecessarily and wantonly to intensify every condition on which monetary pressure depends. We beg the reader to reflect for a moment on the amount of evil involved in this consummation. Between the 7th of September and the 12th of November no less than eighty-five firms, representing an aggregate of L.42,000,000 sterling, became bankrupt. Now, remembering that, in a great commercial society like ours, there are debtors occupying every possible grade on the financial ladder—solvency passing into insolvency by imperceptible degrees—and considering, further, that the ability to pay a debt depends on the value of the medium of payment no less than on the means of the debtor, we ask, can the conclusion be escaped, that some not inconsiderable propor-

tion of the ruin and disgrace set forth in the above figures, is distinctly chargeable on a law which artificially enhances the value of the circulating medium, and aggravates the difficulty of meeting every debt?

But the matter is no longer problematical. Already several important firms, which, sinking under the inability of procuring temporary accommodation created by this law, were compelled to suspend payments, have resumed business, meeting all their engagements in full. "Had its resuscitation been found impossible" says the *Times*, referring to one remarkable instance of this kind, "much distress would have been created in the iron districts." But its resuscitation *would* have been found impossible but for the suspension of the Bank Act. What amount of mercantile disgrace and of popular suffering that suspension was too late to prevent, must for the present be matter of conjecture. But we trust that the Committee just appointed will not fail to make it one of the principal objects of their inquiry.

Our conclusions have hitherto been chiefly negative; and the reader will here naturally inquire—what is to be done? what is the remedy? Unfortunately we have left ourselves brief space to answer this question; and yet we would fain not leave it wholly unanswered. All legislation affecting our monetary system must be directed to one or other of two objects—either to the maintenance of the commercial equilibrium, or, where disturbances do happen, to the restriction of the resulting evils within the narrowest compass;—in short, either to prevention or to cure. Let us briefly consider each of these points.

It was asserted by more than one speaker, during the recent parliamentary debates, and amongst others by the Chancellor of the Exchequer, that the late crisis was the consequence, not of a derangement of the currency, but of an improper use of capital and credit; and the statement was cheered as a discovery; the supporters of the present law especially seeming to find great comfort in this explanation. That such a statement should ever have been made appears to us to be only one more proof of the utter confusion into which our commercial vocabulary has fallen. A monetary crisis is surely only another name for an aggregate of debts in excess of the means of liquidation. To conceive, therefore, the possibility of a monetary crisis being due to any cause distinct from credit, is to conceive the possibility of a debt without its necessary correlative—is to suppose that there can be borrowers without lenders. On the other hand, if "capital" or "currency" be used to include the idea of "credit," the solution simply amounts to saying that the debts which constitute the monetary embarrassment are the result of the credits which created them.—A notable discovery! which one would imagine

the collective wisdom of the nation might have excogitated without a century of commercial experience, including some scores of commercial crises, with their attendant committees of inquiry. It surely requires no argument to prove that a commercial crisis proceeds, and can only proceed, from an exercise of credit; the sole question which can arise in the matter being the particular form which this exercise of credit may assume. Previous to the Act of 1844, it was the fashion to attribute every commercial disturbance to an over-issue of bank notes; an assumption which, in the form of a foregone conclusion, appears to have presided over the labours of most of our currency committees. The authors of the Bank Charter Act, however, have the involuntary merit of establishing by actual experiment the erroneousness of a doctrine which had previously been refuted by argument only. The hallucination being now got rid of, we may entertain a hope that inquiry will, for the future, be turned into more fruitful paths; and we look to the present Committee to bring into view, more distinctly than has hitherto been done, the real character of the credit transactions by which monetary complications are brought about. Let us clearly understand the nature of those transactions—what the motives are which influence respectively lender and borrower in engaging in them, as well as the *modus operandi* by which the results are worked out. When these points are made clear, we shall be better able to judge how far the evils in question are preventible by legislative treatment. That any legislation will be completely efficacious in this respect, we wholly disbelieve. The causes of commercial convulsions lie much deeper than Acts of Parliament can reach, and are to be sought, not in the character of the medium employed to effect exchanges, but in the folly, ignorance, cupidity, and dishonesty of the agents who use them. So long as people give and take credit, and have the power to involve themselves in monetary liabilities beyond their means of liquidation, so long commercial crises will be possible. The true preventive is to be found, not in currency nostrums, but in the intelligence, moderation, and honesty of the commercial classes. Nevertheless we are not without hope that, even in this direction, legislation may be productive, within certain narrow limits, of useful results. The law cannot create prudence where it does not exist; but, by absolving itself from the charge of being prudent for the public, it may call into activity prudence which is now dormant. Further, the law may to some extent prevent imposition, by providing means for its detection, and rigorously punishing it when convicted. These considerations point, the former to the extension of the principle of limited liability to banks, the latter to an improved law of bankruptcy.

As regards the former point, with the evidence now before us, we think it can no longer be doubted that the principle of unlimited liability has had the effect, now very generally attributed to it, of generating, in relation to the institutions to which it is applied, a feeling of unquestioning confidence and of false security, which has rendered possible a description of transactions that, without this opiate, could never have occurred. All credit proceeds upon a belief in the ability of the debtor to restore the value of that with which he is trusted; the more distinctly, therefore, the means at the disposal of the debtor to make good this obligation are defined, the more clearly will the creditor perceive the nature of the risk which he is running, and the less will be the likelihood of improper credit being given. On the other hand, as things look large through mists, whatever invests the debtor's means with a haze of indefiniteness, will proportionately disarm the suspicion of the creditor and relax his caution, and thus afford scope for extravagance on the one side, and improvidence on the other. A distinction, it is true, has been attempted to be made out between banks and other trading concerns, with respect to the applicability of the principle of limited liability; but on what grounds of reason or common sense we never could learn.¹ It appears to us that, so far from the principle being inapplicable to the case of banks, it would, in their case, owing to the numerousness of the proprietary, and the consequent impracticability of imposing any effectual check upon the conduct of the directors, be attended with special and peculiar advantages. Men of substance and prudence, who are now in a great degree excluded by the fearful nature of the risks which unlimited liability carries with it, would be attracted into the directory; and thus the Browns and Camerons, the Waughs and Stephens, would give place to honester men. It is satisfactory to perceive that the public mind is now thoroughly aroused upon this subject, as well as upon the subject of a more efficient bankruptcy law; and we trust that the Committee will not close its labours without some distinct recommendations upon both these points.

There is another measure of "prevention," however, with which we are threatened, against which the public cannot be too strongly cautioned. An outcry has been raised against the practice (almost coeval with the institution of banking in Scotland, and to which, in a large degree, Adam Smith attributed her

¹ We remember, on an occasion not remote, having heard it laid down by a peer of Parliament, and an Ex-chancellor of the Exchequer (Lord Monteagle), that the grand distinction between the two cases consisted in the circumstance, that, "while merchants traded with their own capital, banks traded with the capital of others." The noble speaker seemed to have forgotten that the idea of credit involves the obtaining possession of the property of another, and that whoever does this for the purposes of trade is trading on another's capital.

commercial prosperity) of receiving deposits at interest—an outcry, proceeding, if not exclusively, certainly with the greatest energy, from the supporters of the Bank Act of 1844, who, it would seem, smarting from their recent discomfiture, are endeavouring to cover their retreat under a cloud of declamation against the “Scotch banking system.” “There had grown up,” says Lord Overstone, in his speech at the opening of the session, “a false system of credit, and of holding deposits at call carrying interest,—a system which had grown to an enormous extent, and was still growing; and if that evil was not corrected, it would certainly overturn our monetary system altogether.” . . . “Unless some remedy were devised for it, any attempt to deal with our monetary laws would be utterly deceptive.” .

Now, we by no means desire to deny or to extenuate the reckless extravagance with which business has lately been conducted in institutions in which this practice has prevailed; but, on the other hand, we cannot forget that banking has been carried on in Scotland upon this principle, now for upwards of a century, with a success (whether we estimate it by the accommodation afforded to the public, or by the soundness of the monetary medium) unprecedented in any other country—a success which has extorted the approval and admiration of almost all competent judges; nor can we forget that other parts of the kingdom, where this practice was unknown, have in times past produced examples of banking mismanagement as flagrant as any which have lately been exhibited. But it is contended, nevertheless, and in quarters where we should scarcely have expected such arguments, that the system of paying interest on deposits has some special property of engendering extravagance. The system, it is said, *compels* those who adopt it to embark in hazardous speculations, *in order to* make good, not only the interest which they must pay to the depositors, but the dividends to the shareholders besides. The banks in Scotland and elsewhere, it is alleged, which have committed themselves to this practice, have been forced, in self-defence, to get rid of the funds entrusted to them almost at any risk; they have thus been led to carry on their banking operations with a reserve, dangerously narrow; and hence, we are told, it has happened that, when distrust once occurred, they had nothing for it but to throw themselves for support on more solvent institutions, or at once to suspend payment.

It seems to us that this theory is about as reasonable as if it were contended that a profligate was *obliged* to be extravagant *because* he had anticipated his income, and, having run up a long score with his wine merchant, indulged freely in the bottle as the only means of relieving his surcharged cellar. It surely needs scarcely be pointed out that the institutions in question pay high

interest on deposits, because they wish to speculate largely, not that they speculate largely because they pay high interest. The payment of interest on deposits is surely a matter of choice, not of necessity;—a means to an end, which is sought, not because the means compels it, but because the persons employing such means desire it. The root of the disease is the speculative spirit; and it is to this, and not to the symptom, that our remedies, if they are to be effectual, must be addressed. The state of the case is sufficiently plain. The system of banks holding deposits carrying interest, in connection with the use of cash credits, its natural corollary, is, as has been proved by a long experience, an admirable expedient for economising the circulating medium, and for facilitating general business; but, like other inventions of the same kind, and like the institution of banking itself, it is liable to be grossly abused, and to be employed for wild and dishonest purposes; and, beyond question, it has been so employed. But to proceed on this account to legislate against the practice (to say nothing of the glaring inconsistency of such a course with the doctrine of “free trade in money,”—the watchword, for the nonce, of the party who recommend it), would be merely to retrograde towards that empiricism in dealing with commercial affairs, of which our Statute Book in times past afforded, and indeed still affords, too many examples, but from which, we had hoped, the country was gradually shaking itself free. It would, in short, amount to a partial re-enactment of that most mischievous and ineffectual of meddling measures—the usury laws.

Thus far as regards “prevention.” With respect to the means of moderating commercial disturbances when they do occur, our examination of the credit system of the country has already disclosed the limits within which, consistently with the maintenance of specie payments, this is possible, as well as the conditions on which it depends. The “pressure,” which characterises times of commercial embarrassment, originates, as we have seen, in a distrust, more or less well founded, of the inferior kinds of credit instruments by which, in ordinary times, the business of the country is transacted, and operates through a demand for the more secure descriptions, such as Bank of England notes, and for coin. This demand, we have shown, can, in no distinctive or intelligible sense, be construed into a demand for “capital;” it is a demand for money—for such circulating medium as either is legal tender, or will be accepted as such; and, therefore, to the extent to which we can regulate the supply of this fund of money power, consistently with the maintenance of specie payments, to that extent we can moderate a commercial crisis, consistently with the same condition. The effect of the Bank Act of 1844 is at once to increase the demand for money and to narrow the

supply—to aggravate distrust into panic, while it places the higher forms of credit in trammels, and reduces the available gold reserve to a minimum. The measures, which a correct appreciation of the conditions of the problem would suggest, are the opposite of these—namely, to give free play in such times to the more secure forms of credit instruments, and to make provision, in seasons of confidence, for a large reserve of gold on which to fall back in times of difficulty. The latter expedient Mr Tooke has the merit of having first suggested. It was, indeed, but a practical deduction from the laws determining the rate of interest, enunciated, for the first time, in his pamphlet of 1826. Having there shown that the rate of interest was directly connected with the reserve of money available on loan, the inference was obvious, that, under a credit system resting upon a basis of gold, the possibility of avoiding, on the occurrence of any sudden accession of demand, those violent oscillations in the rate of interest, always so inconvenient and sometimes so disastrous, would depend, in a principal degree, on the amount of the gold reserve, held available to meet such occasions. Into the arrangement with the Bank of England, which Mr Tooke proposes with a view to the accomplishment of this object, we cannot now enter. The reader, however, will find the subject discussed, in all its practical bearings in the closing chapters of the fifth volume of the “History of Prices.”

With respect to the other point—the liberation of the bank note circulation from the mischievous thralldom of the Act of 1844, we have already written at some length. We would only now add, that, if we rightly apprehend, and have correctly described the character of our monetary system, the conditions of the problem are such as no mere modification of the Act of 1844—an enlargement, *e. g.*, of the issues upon securities, an extension of the legal-tender character of Bank of England notes, and others which have been suggested—will satisfy. Nothing but a complete abandonment of the principle of regulating the note circulation *through its quantity*, will meet the requirements of the case. Anything short of this will land us, on the occurrence of our next commercial difficulties,—with a difference, perhaps, in the proportions of gold and securities in the issue department of the Bank, or of gold and Bank of England notes in the reserves of provincial establishments—in the same dilemma from which we have just escaped, and from which, after perhaps an augmented amount of disaster commensurate with the extension of our trade in the interval, we shall escape again only by another violation of the law.

- ART. IX.—1. *Poems*, by the late THOMAS LOVELL BEDDOES. London: William Pickering. 1851.
2. *Pestus: a Poem*. By PHILIP JAMES BAILEY. (Fifth Edition.) London: Pickering. 1852.
3. *The Mystic*. By PHILIP JAMES BAILEY. Pickering. 1855.
4. *The Roman: a Dramatic Poem*. By SYDNEY YENDYS. London: Bentley. 1850.
5. *Balder. Part the First*. By the Author of "The Roman." (Second Edition.) London: Smith, Elder, and Co. 1854.
6. *England in Time of War*. By SYDNEY DOBELL. London: Smith, Elder, and Co. 1856.
7. *Poems*. By ALEXANDER SMITH. (Fifth Edition.) London: David Bogue. 1855.
8. *City Poems*. By ALEXANDER SMITH. Cambridge: Macmillan and Co. 1857.
9. *Night and the Soul: a Dramatic Poem*. By T. STANYAN BIGG. London: Groombridge and Sons. 1854.

MOST disquisitions on poetry begin with an attempted definition of what poetry is, or a rejection of all definitions that have been previously attempted; in either case the result is generally unsatisfactory. A thousand hints have been given, each of which shadow forth a portion of truth; and no one definition can ever compass, and, as it were, crystallise an explanation into some sparkling epigram, any more than the meaning and mystery involved in the word *Life* could be thus briefly unriddled. Approximately, we can arrive at some understanding of the subject by watching the forces of poetry in operation. The poet is, or should be, more of a seer and translator of what God has already created, than a creator in the workshop of his own mind. The Mediævals called the poet a "finder," rather than a creator. He is a seeker and a finder of the truth and beauty that lie in realities around him, rather than a producer of beauty out of the depths of his own personality;—which beauty, as many imagine, he confers on outer objects. And this has been the mental attitude of the greatest poets. They have sought for those things which are hidden from the mass of men by some dimness of sight, or film of familiarity; and, finding these, they become the translators to men of all this truth and loveliness, which is written in the hand-writing of the Creator everywhere throughout His creation, whether flaming on the walls of space, smiling in flowers from the green earth, or inscribed on the red leaves of the human heart. Hence it has been said, that the poet gives us apparent pictures of unapparent natures.

There are two worlds in which human existence moves: the world of thought, and the world of feeling. The world of feeling is more or less common to all. The highest and the lowest can meet on this ground, and enter into this bond of human relationship. But it is different in the world of thought. Many cannot pass from the world of feeling into that of thought at will, and but few are fitted to translate their feeling into thought—which is the spiritual apparition of feeling—and thus reproduce any past experience in such shape as shall give pleasure to the beholder in the contemplation thereof. This is the work of the poet. He translates from the world of feeling into that of thought, and thus enables us to realise in thought what we may have once experienced in feeling. And often, when these reproductions are made by the greatest poets in their happiest moments, they seem quite familiar to us, because we have possessed them before in feeling, only we were unable to translate them into thought. When the poet has given us this new rendering of some old experience, it strikes us with the force of a greater reality than did that experience itself, when we were living it. Hence, we believe, has arisen one of the errors respecting the functions of the Imagination. We do not think that the poet adds to the reality, or transcends it in his translation of it, so much as that we ourselves are unaware of all that is contained in the reality, while we are passing through it in feeling. For this reason, while we are in a state of suffering, or enjoyment, we do not speculate upon it in thought; we live it in feeling. Indeed, the more perfect in feeling, the more unconscious are we in thought. But when, by the poet's aid, we come to re-live this feeling in thought, every faculty we turn upon it is now alive with consciousness; and this secondary phase of joy or sorrow often appears more real than the first, because we obtain a conscious interpretation of much that we before experienced unconsciously.

For the time being, then, we shall look upon the poet as a translator of realities which do already exist, and only a creator so far as he shapes an artistic body through which the life is operative; because, by looking upon him in this light we shall be able to see all the more clearly how poetry is coloured by the age in which it is produced, and takes its tints from the various influences that surround it, quickening its life, fostering its strength, or stunting its growth. For not only is the poet a translator of the inner life of man, with its wonder world of thoughts and feelings—its unspeakable love and sorrow, its hopes and aspirations, temptations and lonely wrestlings, darings and doubts, grim passions and gentle affections, its smiles and tears—which, in their changeful lights or gloomy grandeur, play out the great

drama of the human heart, but he also translates into his poetry and reflects for us the very spirit of his time. The poetry of every age and epoch comes to us with the likeness of that age or epoch stamped upon it, in features ranging from the heroic type of the noble Elizabethan time, to the sensual cast given by the Merry Monarch and his Circean Restoration. See how Chaucer gives us the inner life that men lived in his age, and clothes it with external history! With what crystal clearness his poetry, in its simple heart-home directness and passionate sincerity, homely strength and contentedness with a few pleasures—its gaiety and gravity, both as of childhood—its overflows of animal spirits—its *naïve* way of getting at the truth, lying, as it does, nearer to nature—possessing perfect innocence of eye, and unperplexed in its frank expression,—with what crystal clearness, we say, his poetry images the freshness and sweetness of the morning time, and the lustihood of young life that was then filling England, and breaking into a new dawn of thought! In Chaucer's poetry we see the young unconscious strength of a people that would yet have a grand awakening, and become conscious of its power and prowess in action, and that receptive condition of faith which was to embody the fresh spirit of freedom found in the purer truth of the Reformers, together with the conquering courage that would bear witness for it in the furnace-flames, and carry it in triumph over the world. In a time like that of Chaucer, when the life is simpler, and evolves itself in its happy, unconscious way—when there is not so much knowledge of life as boundless capacity for living, and life itself is a going forth in the very spirit that conquers, and in which all greatest things have been done,—*then*, the influences of the age which affect the poet, and colour his poetry, will be of good help to him; they will strengthen him with their strength, and make his verse vital with their silent surge of new vigour and affluent life.

It is the same in the Elizabethan age. Shakespeare walked every day among heroes and mighty men, and saw around him such magnificence of individual and national life—such constellated wit, lofty thought, and majesty, as have seldom been in this world in one country, and at the same time. He saw the very men who wrought the great deeds, bore the burthen of great events, and worked the grand deliverance for his own beloved land, when it was encompassed with perils, and made her tower again triumphantly over her enemies; and, high as she towered in her added strength and stature to look over the surrounding seas, she beheld no rival left upon them! The men that lived, and the life that was lived by a nation, and ran from its heart through arms and hands in tides of triumph,—these

were translated by Shakespeare and his play-fellows into those wonderful dramas, which, from that little Globe Theatre, have gone forth and filled the great globe theatre of the world. And here, again, we shall find the influences of the age in which the Elizabethan poets lived and wrote, with its tug of war, and wrestle of stern passions; its quickening spirit of enterprise called forth by the dazzling dawn of that New World which rose upon it, and bade Old England become supreme master over the seas that lay between them, offering itself as the prize of victory;—all these influences were mighty in helping to carry the poet out of himself, and all conscious cankering thoughts about self,—which is the greatest thing to be done. For the poet is a medium; and the most perfect condition for conveying the truest image of things, is that in which self is lost in a larger life, and all the spiritual pores are open portals for this larger life of the aggregate humanity. The greatest poet must feel most as others feel—draw most upon the common human heritage. The Elizabethan time, with its buoyant life and outlet of action, was a happy and fruitful time for poetry, and reacted on the poet in fresh forces of life that influenced him in many invisible ways.

Milton, again, has most assuredly gathered up the great-hearted efforts and solemn strength, the wasted bravery and the fiery fervour, of the Puritans, and treasured them for their earthly immortality in his *Paradise Lost*. How like is that work to the endeavours of the purged and purified heart, that has had its earthly tabernacles overthrown, and all its human efforts baffled, trying to build for itself a dwelling-place in the heavens, a house not made with hands, far above the shocks and storms of change, in which the soul can rest serenely, although the head lie down upon a prison pillow, or the tyrant's bloody block!

The play-wrights of the Restoration, too, translate certain influences of their time into their poetry; with what result we all know. Let us hope, however, for the honour of humanity, that no true poet can be the puppet and plaything of such outward circumstances; and that poetry indignantly scorned her wooers in verse, and took refuge with the great divines, who were also great poets, only they had not the musical faculty dominant, or else they despised the tricks of verse, because of the antic apes they saw around them. Still, there can be no doubt but that, in the absence of virtuous public life for poets to translate into their poetry, there will be found poetasters, who will translate courtly vices, and make a fashion of royal depravity; just as the courtiers of James the First went about, and stood in his presence as knock-kneed as they could, because their monarch was also knock-kneed, and thus art followed nature.

We cannot tell how far the life of courts or of nations influ-

once the poet himself; but it is noticeable that, in the following century—the Augustan age, which is one of the meanest and least natural in English history—the poetry of the time not only sharply defines its mean features, but it would also seem to show that the poet himself strove to reflect its manners and externals, its sharp selfishness, spite, and scandal, its envy and jealousies, barren artificiality, and utter want of generous heart and noble life.

In briefly noticing how the poet translates historical influences into poetry, we have now arrived at the great rebellion in poetry when Robert Burns strode in among the crowd of the self-enthroned, who sat trying to conjure up the spirit of beauty, by repeating the words of the grand magicians who had passed away, and carried the secret of their enchantment with them, and passed right through them, scattering their fluttering artificialities and sparkling shallownesses on his way back to unsophisticated Nature. With one or two wistful looks at Pope and Shenstone, he turned to the old ballads, with their sinewy strength, smiting tenderness, lilting music, and flashes of feeling. And Cowper, in England, went back all he could to the primal simplicities of Nature, for he had an out-of-doors heart; and when shut indoors from the garden, and fettered there so often by sickness, he would still feel his way back to the woods and fields, and the common human heart, which he touched with so natural a knack that it would be thought a rare feat of genius, had he not done it so easily.

Then came William Wordsworth, who said, Let us go back to Chaucer, sit down beside him and his darling daisy, and learn of him what wealth of meaning there is in the things that lie about our feet; what strength and savour there is in simple speech; and how the poet may rise, Antæus-like, invincible in strength, so long as he keeps his footing on the common earth. It will do poetry good, said Wordsworth, to take it back, so that it may breathe in new life from the native air of its childhood. Here, then, was a special appeal made to external nature, as a means of getting fresh food for the inner life of man. And a comparatively new influence emanates from this appeal, which mingles largely with all subsequent poetry. Wordsworth becomes the great translator of this influence into his poetry; and after the first flush of the red-rising dawn of the French Revolution, which dazzled his young eyes also, has deepened into blood, he seeks to bring himself and his readers more and more under this influence, and to get further and further away from the sound of the strife, and the smoke of the conflict; because, instead of the Goddess Liberty coming with healing to the nations, he sees a wild Virago dancing round a guillotine, to the sound

of the Carmagnole, in wet, red shoes ; and he shrinks away, and seeks to dwell apart with a nature that is more beneficent and beautiful, in her grandeur of storm, or blessing of calm. And so, in comparative solitude, he falls back upon those elements which are the very ground-roots of poetry, and attains, in a confused and bewildering time, to that repose in which the bright particles of knowledge are slowly precipitated, and shaped into the larger growth and oneness of accumulated wisdom, instead of their being kept in constant whirl by many disturbing causes, and never becoming anything more than the bright particles of scattered knowledge.

The French Revolution had an incalculable influence in bringing forth the great band of poets that came into being, as it were, through the rents made by the outburst of that Revolution, and produced such a quickening motion of mind, as issued in a very budding and flowering-time of poetry. But much of this influence had an effect on the ordinary current of human life, which runs through the poet's mind as well as through the mind of others, similar to that of the tributary torrents that rush down in thunder, and the swollen strength of storm, to the river, which they quicken in speed, and increase in size, but also make it muddy in colour, and heap it with driftage. In Shelley, for example, we see the disturbing influence at work most manifestly. He tries to translate the French Revolution into verse, and is so perplexed with the problem, that he nearly loses his wits. The power that he grappled with lifts him off his feet, and bears him away like a weak child, striking blindly with vain blows. The shock unsettles him for the rest of his life. Byron rises up from the smoke and ashes of that Revolution, not altogether unlike Milton's image of Satan, rising up from the fiery bed of the lower lake, towering with passion, distended with pride, and threatening high Heaven with future vengeance. He brings into poetry the wail of the wounded, the doubts of the sceptical, the defiance of the daring ; he rises into blasphemy with the boldest, and sinks into bestiality with the most sensual. Byron does not translate these revolutionary influences, as Shelley did, from earnest sympathy of his soul with others' suffering, and real yearning of spirit for the reign of right, so much as from a desire to be seen fiddling while Rome is in flames, and from his love of astonishing people, and of frightening them now and then, which he knows is so easily done in such startling times. Keats laid himself down among the sweet wild English flowers, under the murmuring leafy trees, stopped his ears to the din of battles, shut his eyes on the struggles of politics and the shows of statecraft, and dreamed his dream of the old Greek Beauty. Tennyson, in his greatest song, sets himself to wrestle with the doubts,

bear the burden of the fears, and ring out clear in music the troubled hopes which were bequeathed to us by that time of mighty deeds, and mighty men, and mighty blunders; and this he does by a firm reliance on those few intuitions of feeling which were given us at the beginning. Tennyson's is the last song that rises up calmly, and rings out clearly with its melodious beauty, in spite of the pressure of our complex time, and the stress of its adverse influences. After him comes that deluge let loose upon us by what has been called the "Spasmodic School."

We fancy there is more meaning and applicability in the name of "Spasmodic," given to so much of the poetry which has been produced of late years, than the first givers of that name saw in it. It is frequently the special characteristic of a nickname, that it shall be too vague and intangible to be seized upon and proved to be false; and so it lives, just because it cannot be caught and put to death. Here, however, the name might be demonstrated as true to the nature. For what constitutes spasm, but weakness trying to be strong, and collapsing in the effort? And what result could be looked for more naturally, than that a good deal of current poetry should be spasmodic, if we carry on into the present time our consideration of the external causes that influence poetry? When the giants of genius shall free themselves from the Etna that now hides them, they may come and make it possible to transmute into poetry those influences which are at present only a hindrance to others, making their own new laws, and breaking old ones, surprising the whole world with most magical results; but, till then, poetry, in the hands of our present writers, is driven into narrower bounds, and left with more limited means of freeing itself. The greatest poetry always finds its main source of sustenance in a few common universal elements, which are to it what the elementary substances are to chemistry. It deals with simple powers. Trust, for example, we would call one of the simple powers of poetry. Doubt, on the contrary, we should call a compound, made up of perplexed thought and uncertain feeling; and, being a compound, it can be divided and destroyed. Now, many tendencies of the time are at war with the simple powers, and are in favour of the compounds. The out-flowing tides of feeling are checked and forced back upon the poet, so that he feels compelled to turn his eyes within in self-analysis, until, instead of living, he gets bewildered at the mystery of life, which he cannot solve, and dazzled with the new knowledge, which he cannot assimilate; instead of telling us what time it is by the face of the clock, he pores over the problem of the wheels, and for every gain of curious insight he loses some intuition of more precious value, until at length the conscious intellect is enthroned

in the seat of that unconscious child-like spirit, in which all that is most human meets with what is most divine, even as the little children came near and were taken into the arms of Christ of old. Our spasmodists, in a great measure, are dealers in compounds. And not only are they driven out of the great poet's path by force of many outward circumstances, and have not sufficient knowledge or grasp of the simple powers by which poetry is brought home to our business and bosoms, but, in some instances, they wilfully turn from the simple powers to try their experiments with the compounds, and their only ambition appears to be how to puzzle us with the subtlety by which they can work for our perplexity and their remote result. Shelley, in the *Cenci*, says with great truth,

“ It is a trick of this same family
To analyse their own and other minds.
Such self-anatomy shall teach the will
Dangerous secrets, for it tempts our powers.”

The first condition of being a poet, is to be a man speaking to men. He who is to image humanity, must at least be able to stand on a common level with it, and by his many sympathies enrich his special experience with all that is universal; thus losing the poverty of the individual in the wealth of the species. But it is the evident predilection of our spasmodists toward that “abstruse research” among morbid phenomena, which “tends to steal from his own nature all the natural man,” and the habit of their minds to move in the involution of thinking, instead of the evolution of thought. Also, it is their fatal fault to seek for that which is rare and peculiar, and to be afraid of that which is common, and timid of matter-of-fact and mere flesh and blood. If they do not do this intentionally, then so much the worse is it for the class of mind that is so limited and perverse as to take this direction instinctively. Either they seem not to share our ordinary feelings and plain humanities of thought and speech, or they cannot grasp ordinary realities; for the emotion to be sung, or the character to be painted, must have branched off far from the ordinary channel of human affairs, and run into an isolated and particular experience, before it is fitted for their poetic purpose. They refine upon reality till it becomes the faintest shadow, and only attempt to grasp it at the stage in which it cannot be laid hold of.

Now, if a poet possesses his manhood in common with the rest of us, shares our thoughts and has feelings in tune, and has truly a genius for transmuting and translating these into poetic forms, he cannot keep too much on broad human grounds. The charm will be in the common human experience being rendered

in his subtler light, and coloured in the prism of his own personality. If he have sufficient genius, it is in universal experience that he will find his greatest strength,—out of it he will draw the universal success; if he have not sufficient genius, then all the seeking in the world, or out of it, for that which is remote and uncommon, will be but of little avail in disguising his weakness. Our spasmodists appear to take for their text, and apply it at all times and in all places, the words of Ecclesiasticus, “A man’s mind is *sometimes* wont to tell him more than seven watchmen that sit above in an high tower.” They forget that this is only sometimes so, when the darkness of night shuts in the view, for example; and so they will not avail themselves of what the seven watchmen may see when the broad light of day lies on the land, and reveals the many features of the landscape. Hence their tendency to look with an introverted vision alone, instead of looking out with wide open eyes, and deriving advantage from the experience of others, as do the great objective writers. It is here, in this respect, as it is in the moral world, those who are wise will benefit by the lives and experience of others, and those who are foolish will only be taught by their own.

We admit the great difficulty in dealing with much poetic material of the present time, deprived as the poet necessarily is of many resources open to the great poets of the past. There is so much more knowledge current among men; and this not only tends to lessen his authority and increase his personal difficulty, but it possibly leaves much less simple feeling among those who of old would have given themselves up with implicit faith and honest sympathy to his utterances. But, all the more reason why the poet should steadfastly abide by the true elements of poetry, and all those positive influences which yet live in our human nature; and, holding fast by these, resist the negative and perplexing influences of our peculiar time, and bring poetry and the readers of poetry back to nature, by touching that nature which runs through the hearts of all.

The band of young poets who have come before the public during the last few years, have been called the “Spasmodic School,” though there is not oneness of principle in their efforts sufficient to give consistency to them, and bind the writers together in any educational brotherhood. Certainly they include almost every variety of spasm; but there are many spasmodic writers, in both prose and verse, beside those who have been denominated as the Spasmodic School. On the other hand, it would be somewhat difficult to point out any great master as the founder of this school. It appears to us that Robert Browning is, in a sense, one of the greatest spasmodists, so far as a wilful

have been more in place if spoken by an observer of the gloomy man charged with murder, than given as a self-reflection. But, the obvious tendency of his poetry is mainly phrenetic in effect, rather than fine. The following examples will bear witness to his relationship with our Spasmodic School:—

“That frightful forest grows
Under the darksome corner of the sky,
Where death’s scythe hangs : ‘its murder-shading trees
Are hairs upon hell’s brow.”

“May I speak never more, but be struck dumb !
May I be stripped of manhood and made devil,
If I mean not as truly unto thee.
But put me to the proof, say, ‘Kill thyself,’
I will outlabour Hercules in will.
Shall I fight swordless with a youthful lion ?
Shall I do ought that I may die in doing ?
I almost wish thou hadst some impious task,
That I might act it.”

The peculiar nature of Beddoes’ mind, which appeared to swarm with morbid instincts, made his end in poetry a melancholy warning. He gradually lost what hold he had upon the warm, rich world of human life, fed with common human affections, and filled with common human sympathies, in pursuit of unnatural mental anatomy, and in search of those mysteries which death renders up in the dissecting-room. For he became an anatomist literally. The poet, no longer satisfied with the beautiful instrument breathing its music, would take it in pieces to see whence the music came, which was a secret death could not reveal. To adapt an image of James Montgomery, he sought to grasp in his own hand the dew-drop, which, when touched, at once loses all its sparkling grace, its shape of beauty, its light from heaven, and is merely a little water, having the one quality of wetness. The gift was taken from him, and died out of him utterly. And little marvel that this should be so : after reducing the ethereal fire to ashes, in search of a mere earthly discovery,—somewhat analogous perhaps to the accidental discovery of glass-making,—it was too much to have expected that the radiant Phoenix of poetry would ever soar again from these ashes, when the fire was wilfully put out for so paltry a purpose. Beddoes, we say, became an anatomist ; and is not this precisely what some of our recent writers in verse have become ? They also are probing among the secrets of the skeleton which lies hidden beneath the rosy bloom of flesh, with speculations on bones and membranes, cells and blood-vessels. Oyster-like, they get their pearls from a state of disease. If we were asked

to indicate the poem which has been most harmful, and has wrought most evil to the young poetic mind of our time, we should unhesitatingly point to "*Festus*." Bailey's poem is a vast work, in which egotism is the presiding principle, as it was in building that Babel of old. In going through it, the reader feels as though he were witnessing a series of grand pyrotechnic displays of gorgeous but evanescent brilliance, until his aching eyes are so dazzled, that he feels himself in "a land of darkness." The writer's object throughout appears to be to strike us blind rather than to illumine us, and to leave us breathless rather than breathing. And at last the difficulty of reading the poem becomes bewildering. This comes of the author possessing some of the poetic faculties in full development, and almost, if not totally, lacking others which are quite as necessary, if not more so, for the completion of a poet, and the production of true poetry. The faculties that he does possess, are precisely those which need the reins of judgment and taste, and the curb of prudence; for without them he is borne, and hurried, and whirled away in a wild confusion, and a sublime disregard of all artistic and æsthetic proprieties, and all moral and religious associations. Indeed, the moral sense seems wrecked in a "sea of rich and ripe sensation." The earthy, the heavenly, and the diabolic mingle and dance over all boundary marks. There is no perception of the differences between small and great, the vague and the vast, the gigantic and the deformed, the boundless and the lawlessness that is without bounds.

"*Festus*" is not, what it has so often been called, a great poem, because it is altogether wanting in the welding oneness that moulds the great works of imagination. There is no magnet of sufficient purpose passing through its glittering filings of the fancy, and gathering them up into fitting form. And when we use the word "filings" here, we do not do so merely in a figurative sense; for the truth is, that poems of the "*Festus*" order are principally made up of filings from other men's works—hints and suggestions got while reading the writings of others, sometimes by reading between the lines, often by direct appropriation, however unconscious; thus making the result mainly a parasitic growth, based upon the beginnings of others, instead of an original creation, with the life that shapes into symmetry and oneness energetically running through it, from the lowest ground-root of strength with which it grasps the subject, to the topmost leaf wherewith it breaks into beauty. Here we shall find none of the suspended, poising strength, as of the mountainous repose which marks the climacteric expression of the highest powers in the world of mind, even as they are also the grandest expression of power in our physical world; for these

can only be attained by the creative mind, that under the dominant idea moves with all its powers at once, each keeping proper place and perfect time, harmoniously to one great end. It is thus the great poets work; and we perceive that they accomplish their great ends with such a repose of power, that, like the best generals, they appear to have won the battle, and only to have brought half their forces into the field. But here, all the forces are brought into action in hot haste, all parts of the subject are taken by storm, and every lurking place of fancy is at once sacked. "*Festus*" is full of fine things of the startlingly staring kind, which are so apt to be not so much original as the reflections of other fine things seen in a distorting mirror; and when such are original, they are used very sparingly by the great poets. Upon an average, there are a dozen illustrations for every thought; and thus the poverty of thought is gilded with a lavish wealth of imagery. The most imaginative poets use the fewest images: these belong more to the lower range and flight of fancy; and yet, with many recent writers in both prose and verse, these images appear to constitute the primal proof of poetry, and the power of producing them the distinguishing characteristic of the poet. "*Festus*" and its critics have done much to foster this fallacy.

"*Festus*" has also been fatally successful in leading astray, because all phenomena that cannot be explained by known laws open up at once a fresh field to work in; and so long as the phenomena cannot be classified, or the precise amount of their truth ascertained, there is but little fear of the sham and spurious imitation being known from what is true and real. This fact will account for much of the flying-off into space, which characterises recent verse, in order that it may avoid the verdict of an appeal to well-known laws, and not because the writers possess wings at will. If you cannot represent the world of reality, this plan of taking refuge in the impalpable affords a fine chance of fabricating a false world, which may float for a time as a beautiful bubble on the breath of those who puff it. False and futile, however, are all these attempts to create a world apart from that of human life, in which the poet shall be absolved from all known laws, and freed from ordinary conditions, in order that his idiosyncrasies may run riot without let or hindrance. Ordinary human beings cannot enter such a phantom world. Shut up in our house of the senses, with some half-a-dozen windows for outlooks into the infinite, we cannot follow, house and all, on pleasure-excursions into the spirit world, as "*Festus*" and others would have us, and mingle with its inhabitants on perfectly familiar terms. If Shakespeare, after mirroring so much of our human world so faithfully, had attempted to lead us into the invisible world, we might have followed with a

firmer reliance. But he was all too wise, and left that for Milton to do, when God had laid the shadow on his outer eyes, and freed the inner from earthly scales, contenting himself with giving those hints that flash upon us in the high and mystic moods of thought.

Of all the spasmodists, Mr Dobell is the most original thinker and coherent writer. In some high gifts of the poet, he is magnificently endowed. He gives us in his pages many glimpses of the most subtle loveliness ever opened up by the vision of poetry; much deep thought, expressed with a quiet majesty of speech; and often his poetry touches a depth of tenderness that reaches down to the hidden springs of tears. And yet, for want of a few common but very necessary qualities, Mr Dobell fails, and we fear will fail, to bring home his poetry to any considerable number of people. He possesses a large and shaping imagination, which often flows with such serious and subtle sweetness as to leave the reader only half aware of its tide of strength; only, this imagination is left without sufficient material to work upon, for want of action and character in the subject. This necessitates its working more apart in some peculiar domain of poetry. It is comparatively seldom that the pursuit of what is common leads the poet and the artist astray, it is this pursuit of what is uncommon and peculiar that becomes so fatal; and this, either from instinctive necessity or wilful choice, perhaps both, is the great bane of Mr Dobell. He appears to select his subject, and the point of treatment, for their remoteness from all ordinary reality, and then to refine upon these until they are intangible to us.

Given some genius, the great difficulty often still remains, how to bring it to bear upon the minds of men with simple power, without much wandering in useless ways, and waste of scattered effort. We often fancy that the difference betwixt a born poet and a born fool is quite as slight as the partition that is said to divide genius from madness. Frequently, from the undue prominence of some one faculty, or the want of another, years and lives are spent, and the anticipated result is never gained. The most striking cases of this kind occur in poetry, where there is considerable poetic faculty, so-called, power of fancy or imagination, with a lamentable want of the few qualities which may be found doing the business of the day and the ordinary work of the world, and which are generally summed up as common sense. For, after all, this common sense is the main ground to begin on as a basis of higher operations. It is upon this ground that the mass of men can mingle; and if they can meet the poet here, they will trust him and try to follow him, when he leads them on, and lures them up into the higher regions of thought. As inhabitants of this earth, we must feel the ground under our feet if we are to walk. The common sense qualities constitute our intellectual

earth ; and if you cut this ground from under the feet of those who have no wings, it is little wonder if they fall, and cannot follow. For lack of this common meeting ground, many, otherwise rarely gifted, fail in part, or altogether, to bring their gifts home to the mass of men. Beside which, we invariably recur to the works of the great creative minds to find how solid has been their common sense capacity, and how much of their life overflowed in universal feeling. They could go to market with Pegasus and bring back daily bread for us, as well as return with food from the loftiest realms of imagination. We find also that the poetry produced by these master minds will stand the test of value when the touchstone is the heart of the people. The greatest poets can stand this test ; but there is a manifest desire in those who work in very limited and special regions to shun and to undervalue this standard of appeal, and to think too much of the " fit audience, though few." We would insist on this test, and apply it to the spasmodists, because of their evident tendency to avoid it, and in every way to overshoot the mark.

Peculiarity of choice and subtlety of treatment constitute Mr Dobell's spasmodic claim, else he is seldom, if ever, spasmodic in expression. But so peculiar is he in choice of subject, that he has written "*Balder*," a poem of some seven thousand lines, which nothing less than re-writing altogether, on a new and better plan, can make anything else of than a vast mistake. And so subtle is he, that he will hide the most precious gems of poetry where it is impossible that they can ever be found. With regard to "*Balder*" as a subject, we think that the more successful its treatment, according to the author's apparent idea, the more repulsive it must be ; beside which, we doubt whether the poetic representation of such a character, which is intended as a warning, can be half so effective as an embodiment of a good example, because, for one reader who can go through this poem, and perceive its negative intention from intellectual insight, there are a hundred who might have been bettered unconsciously through their sympathy with what is good. It is past all human patience to feel a sustained interest in such a person ; and long before the end of his self-exhibitory monologues, we wish him hanged in the whole seven thousand lines. Shakespeare, who could make a character unfold the secret of a life in an hour, when he gives us a self-involved and self-introverted one like Hamlet, even he can only afford to let him stand in the centre, think and soliloquise, because there is so much interest in the group of life that revolves around him in dramatic relationship ; but Mr Dobell lets "*Balder*" go maundering on and on, with no variety of interest, and with no sense of the lapse of time. In the "*Roman*" he has a clearly conceived character, which has

something of a living embodiment in the life of Mazzini; and here, as well as in several of the lyrics in "England in time of war," he comes much nearer to the common understanding, and treads on broader human ground with greater success. There is more simple power of genius, more promise for the future, in such a ballad as the following, than in many magnificent pages of magniloquent blank verse:—

• HOW'S MY BOY?

"Ho, sailor of the sea!
How's my boy—my boy?"
"What's your boy's name, good-wife,
And in what good ship sail'd he?"

"My boy John—
He that went to sea—
What care I for the ship, sailor?
My boy's my boy to me.

"You come back from sea,
And not know my John?
I might as well have ask'd some landsman
Yonder down in the town.
There's not an ass in all the parish
But he knows my John.

"How's my boy—my boy?
And unless you let me know,
I'll swear you are no sailor,
Blue jacket or no,
Brass buttons or no, sailor,
Anchor and crown or no!
Sure his ship was the Jolly Briton."
"Speak low, woman, speak low!"

"And why should I speak low, sailor,
About my own boy, John?
If I was loud as I am proud,
I'd sing him over the town!
Why should I speak low, sailor?"
"That good ship went down."

"How's my boy—my boy?
What care I for the ship, sailor?
I was never aboard her.
Be she afloat or be she aground,
Sinking or swimming, I'll be bound
Her owners can afford her!

I say, how's my John ?"
 "Every man on board went down,
 Every man aboard her."

"How's my boy—my boy ?
 What care I for the men, sailor ?
 I'm not their mother—
 How's my boy—my boy ?
 Tell me of him, and no other !
 How's my boy—my boy ?"

The way in which that poor mother wrestles down every suspicion with her love stronger than death, and in which her heart fights with such terrible earnestness to keep the fatal knowledge from her mental apprehension, as she pursues the old sailor question after question, and will not understand his answer, is surely very true and touching.

We might select from Mr Dobell's books many fine things, if that were desirable, and our space would permit,—not merely striking illustrations, but full and sustained descriptions, passages of exceeding power, images of surpassing beauty, and flowers fragrant with a womanly purity ;—many gentle touches like this, which expresses very happily the feeling of one whose hold on life has been so lovingly loosened, that the weariness glides easily into content :—

"I feel two worlds : one ends and one begins.
 Methinks I dwell in both ; being much here,
 But more hereafter : even as when the nurse
 Doth give the babe into the mother's arms,
 And she who hath not quite resign'd, and she
 Who hath not all received, support in twain
 The single burden ; nevertheless the babe
 Already tastes the mother."

And like that in which the poet speaks of standing by a death-bed "with such forgiveness as we bring to those who can offend no more."

The spasmodic character of much of the "Life Drama" is well known. Our readers will remember the full discussion of Mr Smith's claims in the third-eighth number of this Journal, and the advice then tendered to him on the score of ideal exaggeration. This makes it unnecessary that we should now devote much space to his works. In his second volume Mr Smith is much less exaggerated. He has, too, attained at times to a quiet continuity of thought, and sustained strength of coherent utterance, such as we could not find in the first book. He startles us less with the spasmodic sublime, and gives us

many passages that sound the deeps of feeling, and leave us satisfied with their sweetness. We see many signs that the author is trying to do his best; and if there is not much new growth, he has been shedding the old, so that the new may come in season. We are led to hope that his exaggerations were only a "passing spasm."

We see no reason for going further into detail on the subject of the "Spasmodic School," and we trust that some of our remarks may have gone near enough to the root of the matter, to obviate any necessity for our doing so. On the one hand, we can scarcely undertake to prescribe in the precise language of science for the specialties of the given disease, and the idiosyncrasies of the individual patients in each particular case; and, on the other, we have no wish to give an answer as *ex cathedra*. We urge a return to the lasting and true subject-matter of poetry, and a firmer reliance on primal truths; for it is this which has so often given fresh life to both poetry and painting in the past. Crowded as the ground may have been, there is still room for great poets to walk here. Anything that has in it a genuine human interest is sure to win its way to the heart, so irresistible is the touch of real truth. This is the vital and enduring element of the Dutch painters. Their genuine statement of truth is sufficient to keep alive their pictures, though that truth be never so obvious and commonplace. And this is why those books are so successful that treat of the coarser passions. They have in them a real human interest, because they make their appeal to feelings which do exist. We are not here arguing in favour of Dutch pictures or French novels, but for that reality which is the basis of all poetry, and that truth which is the basis of all beauty. As Realists, we do not forget that it is not in the *vulgarity* of common things, nor the mediocrity of average characters, nor the familiarity of familiar affairs, nor the everydayness of everyday lives, that the poetry consists,—not the commonnesses of a common man, but those universal powers and passions which he shares with heroes and martyrs, are the true subjects of poetry. Though we advocate that all beauty must be true, we are not responsible for the converse of the proposition, that assumes all truth therefore beautiful, and that, consequently, "twice two are four" constitutes poetry. Like the consecrated banner of a Cortez, wherein the enthusiastic churchman may see the cross, and the ambitious patriot the crown, but which, to the eyes of the rabble in their train, is merely a waving absolution, this cry for common sense, matter-of-fact, and everyday life, may be followed by some, not for the right in which it originates, but for the wrong to which it may be perverted; but if it be so, they can never arrive at results more lamentable than the crowd who have

followed the formulas of "high art" and the "ideal." And if poetry is to get home to us with its better influences, to hearten us in the struggles of life, beguile us of our glooms, take us gently from the dusty high-road, where we have borne the burden in the heat of the day, into the pastures where the grass is green and grateful to the tired feet, the air fragrant, and the shadows are refreshing, and draw us delicately up to loftier heights of being, we must have songs set to the music of the faithful heart,—we must have poetry for men who work, and think, and suffer, and whose hearts would feel faint and their souls grow lean if they fed on such fleeting deliciousness and confectionary trifle as the spasmodists too frequently offer them,—we must have poetry in which natural emotions flow, real passions move, in clash and conflict—in which our higher aims and aspirations are represented, with all that reality of daily life which goes on around us, in its strength and sweetness, its sternness and softness, wearing the smiles of rejoicing, and weeping the bitter tears of pain—weaving the many-coloured woof of Time, and working out the hidden purposes of Him that "sitteth in the heavens."

ARTICLE X.—RECENT PUBLICATIONS.

- I. *Brazil and the Brazilians, Portrayed in Historical and Descriptive Sketches.* By Rev. D. P. KIDDER, D.D., and Rev. J. C. FLETCHER. Philadelphia: Childs and Peterson. London: Trübner and Co. 1857.

IT is quite true, as our authors allege, that great ignorance of Brazil prevails both in Britain and in the United States. Few have been accustomed to think of it as a great constitutional monarchy, ruled over by a wise and accomplished Prince. The popular notion has been the prevalent one even among educated men. It has been regarded as a land of "mighty rivers and virgin forests, palm-trees and jaguars, anacondas and alligators, howling monkeys and screaming parrots, diamond mining, revolutions, and earthquakes." If other figures have been added to the picture, they have not made it more attractive, for they have been figures of men stricken with ague and yellow fever, of negroes and negro drivers, of mining desperadoes and of political despots, of importunate beggars, and of a superstitious priesthood. Whence these current views have been derived, it would not be easy to determine. We have to thank Gardner, Ewbank, Waterton, Wallace, and the authors of this peculiarly interesting volume, for setting us right on all these topics. Some of the features, both moral and physical, now referred to, are characteristic, but these do no more than supply a dark back-ground, on which to bring more attractive figures out in sunlight. This faithful portraiture of Brazil and the Brazilians, will not fail to be influential. New channels will be opened up for the streams of British and North American enterprise; and the sympathies of the Anglo-Saxon race, will cluster more closely around this great people, and their present justly esteemed great Prince.

The work now noticed is the joint effort of the Rev. Dr Kidder, of the American Methodist Episcopal Church, and of the Rev. J. C. Fletcher, of the Presbyterian Church, who recently visited Brazil as missionary travellers, and the latter of whom held, for some time, the post of Acting Secretary of the United States' Legation at Rio de Janeiro. This brotherhood of energy, enterprise, and love for, and devotion to, missionary work, between representatives of the leading ecclesiastical denominations of America, is peculiarly graceful. As the sketches bear to be historical and descriptive, our brief notice of them shall assume the same form.

The introduction into Spain and Portugal of the knowledge of the polarity of the needle, and the application of it in maritime

enterprise, about the beginning of the fifteenth century, soon began to change the political condition of these countries. The mariners of the Peninsula hastened to use it for purposes of national aggrandisement. In a few years, wondering Europe was told of lands, the tidings of whose beauty, fertility, mineral wealth, and varied forms of animal life and of vegetation, acted very powerfully, especially on the warm imaginations of the people of the South. At a period so early as 1486, Portuguese voyagers had sailed down the western coasts of Africa, and had doubled the Cape of Good Hope. The dream of lands beyond that great ocean, out on which for ages men had looked from the bold headlands of Lusitania, was realised. In 1498 Columbus cast anchor at the mouth of the Orinoco. The sanguine southern mind was deeply agitated when the treasures from the "New World" were spread out before them. Poets' sung of them,—soldiers dreamed of conquest,—statesmen of aggrandisement,—the multitudes of never-failing wealth, and "The Holy See" of wider absolute influence. In 1500, the Portuguese navigator, Pedro Alvares Cabral, discovered Brazil, took possession of it in the name of his sovereign, Dom Immanuel, and named it *Vera Cruz*. In 1503 a second expedition was sent out. The Florentine, Americus Vespucius, whose name is now more intimately associated with the western world, than that either of Cabral or Columbus, joined this. As the most remarkable part of the cargo which Vespucius brought to Europe, was the dyewood—*cassal-pina Braziliensis*—called in Portuguese, pau Brazil, on account of its resemblance to *brazas*—"coals of fire,"—the name of Brazil was given to the newly discovered region. Portugal continued to hold it, and governed it by viceroys sent from the mother country, up to the year 1803, when the Prince Regent, Dom John VI., was forced to leave Portugal on account of the part he had taken with Napoleon against England and the Allies. He carried with him the fruits of the civilization of the Old World. Commerce grew in importance,—printing presses were set up,—libraries founded,—colleges opened,—and all the social habits and fashions of Portugal began to prevail on the shores of the Bay of Rio. The remaining historical incidents are well-known. Dom John returned to his native land, after having resigned the government into the hands of his son, the well-known

1 "What wars they wag'd, what seas, what dangers pass'd.
 What glorious empire crown'd their toils at last;
 Vent'rous I sing, on soaring pinions borne,
 And all my country's wars the song adorn'd:
 What kings, what heroes, of my native land,
 Thunder'd on Asia's and on Afric's strand;
 Illustrious shades, who levelled in the dust,
 The idol temples, and the shrines of lust."—*De Camões*.

Dom Pedro. Soon Brazil broke off from the mother country, and set up as a constitutional and independent state, and it now occupies such a place in South America as the United States does in North.

Mr Fletcher visited Brazil in 1851, at a season when the Hudson and Potomac were bridged over with ice; but as he entered the Bay of Rio, he found the balmiest breezes blowing,—the palm-trees in full foliage, waving above the world of vegetation around them, and all nature rejoicing in the warm sunlight. The entrance to the Bay is exceedingly beautiful:—

“On either side of that contracted entrance, as far as the eye can reach, stretch away the mountains, whose pointed and fantastic slopes, recall the glories of Alpland. On our left, the sugar-loaf stands like a giant sentinel to the metropolis of Brazil. The round and green summits of the *Tres Irmaos* (Three Brothers), are in strong contrast with the peaks of Corcovado and Tijuca; while the Gavia rears its huge sail-like form, and half hides the fading line of mountains which extends to the very borders of Rio Grande do sul. On the right, another lofty range commences near the principal fortress which commands the entrance of the bay, and forming curtain-like ramparts, reaches away, in picturesque headlands, to the bold promontory, well known to all South Atlantic navigators, as Cape Trio. Far through the opening of the bay, and, in some places, towering even above the lofty coast barrier, can be discovered the blue outline of the distant Organ Mountains, whose lofty pinnacles will at once suggest the origin of their name. The general effect is truly sublime; but, as the vessel draws nearer to the bold shore, and we see, on the sides of the double mount which rises in the rear of Santa Cruz, the peculiar bright leaved woods of Brazil, with here and there the purple-blooming quaresma tree; and, when we observe that the snake-like cacti and rich flowering parasites shoot forth and hang down from the jagged and precipitous sides of the Sugar Loaf; and, as we single out, in every nook and crevice, new evidences of a genial and prolific clime, emotion, before overwhelmed by the vastness of the outline, now unburdens itself in every conceivable exclamation of surprise and admiration.”

The interior of Rio de Janeiro is graphically sketched, and the accompanying artistic engravings help us to realise, very fully, the aspect and condition of the city. The degrading influences of Romish worship are dwelt on and fully illustrated,¹ and a de-

¹ Sights of superstition, surpassing even those which, during religious festivals, we have witnessed on the Continent, are very frequently met with in Brazil. The Romanist population delight in the dramatised religious mysteries which are still favourites in the mother-country. Very ludicrous incidents often come to be mixed up with these. “A civilised Indian, by the promise of *muilo cacalaca* (plenty of rum), consented to personify our Saviour on the cross. His position was a trying one; and, at the foot of the crucifix stood a bucket filled with rum, in which was a sponge attached to a long reed. The individual

servedly high tribute is paid to the Brazilian authorities for their attention to their much needed hospitals. A number of *Irmandades*, or brotherhoods, have been formed, on whom devolve the unpleasant, and frequently, dangerous duties of the hospitals. The account of them given by our authors is deeply interesting. The scenes, however, witnessed at the Foundling Hospital, are of a very different description, and afford us a glimpse into a dark gulf of misery, degradation, cruelty, and abounding sin.

The beggars of Brazil seem to be a highly privileged class, and to drive a singularly lucrative business :—

“Some are carried in a rede by two slaves, or drawn by one. One worthy rejoices in a little carriage pulled by a fat sheep; and another, a footless man, rides on a white horse. Sometimes, in country parts, beggars, whose pedal extremities are free from all derangement, play the cavalier, altogether disdaining to foot it, and seem to receive none the less charity than if they trudged from door to door. Upon one occasion, a female beggar, adorned with a feather in her bonnet, and mounted on horseback, rode up to a friend of mine at St Alexio, and, demanding alms, was exceedingly indignant at any inquiries as to the consistency of her costume.”

We much like the way in which Messrs Kidder and Fletcher look at the “peculiar institutions.” Their book will be very useful on this question, in the United States. The free, loving, and truthful longings as to the slave’s future, will find their way to hearts which will never open to the overdrawn pictures of professional abolitionists. Brazil, too, shows an example which the States might well imitate. Slavery is indeed allowed by law; but the inhuman African traffic is forbidden, and every facility given to the slave to work out his freedom. And once free, he may rise by talent and energy, to the highest offices in the state.

The following notice of a new disease is painfully interesting :—

“At Limfeira I became aware of a new disease, which, like the *goitre*, seems to be confined to certain localities. I was sitting in the office of Dr ———, conversing with him in regard to Brazil, when I observed a Portuguese, about sixty years of age, enter, and demand, with great earnestness, if he thought that he could live. Soon after, a middle-aged Brazilian came, and, seeming to cling to the words of the physician as tenaciously as to a divine oracle, made nearly the same interrogatory. Neither of these men appeared in ill health, and,

whose duty it was to refresh the *caboclo*, forgot his office, while carried away by the florid eloquence of the *padre*. The Indian, however, did not forget his contract, and, to the astonishment, as well as amusement of the audience, shouted out, ‘*O Senhor Judeio, Senhor Judeio, mais fel!*’” (O Mister Jew, Mister Jew, a little more gall.)

if I had not heard them state that they had great difficulty in swallowing, I would have considered them in a perfect sanitary condition. Upon inquiry, I ascertained from the doctor, that these men had a disease which is widely prevalent in some portions of Interior Brazil, but he has never seen a notice of it in any medical work whatever. The Brazilians call it *mal de engasgo*. The first indication of its existence is a difficulty in swallowing. The patient can swallow dry substances better than fluids. Wine or milk can be drunk with more facility than water ; still, both are attended with difficulty. To take thin broth is an impossibility. In some cases, fluids have been conveyed to the stomach in connection with some solid. The person thus afflicted appears to be in good health, but, in five or six years, death ensues from actual starvation. The suffering of such a one was described to me as most horrible."

To as many of our readers as have a taste for descriptions of forest scenery, we can promise gratification in abundance, if they will turn to page 277, and follow Mr Fletcher into the blooming woods of the Serra dos Orgões:—

"In the months of April and May (October and November in Brazil), only the autumnal tints of our gorgeous North American woods can compare with the sight of the forest of the Serra dos Orgões. Then the various species of the *Laurus* are blooming, and the atmosphere is loaded with the rich perfumes of their tiny snow-white blossoms. The *Cassia* then put forth their millions of golden flowers, while, at the same time, huge trees—whose native names would be more unintelligible, though less pedantic, than their botanic terms of *Sasandra Fontanesia*, and others of the *Melastoma* tribe—are in full bloom ; and, joining rich purple to the brightest yellow, present, together with gorgeously-clothed shrubs, 'flowers of more mingled hue than her (Iris's) purpled scarf can show.' From time to time, a silk-cotton tree (the *Chorisia speciosa*) shoots up its lofty hemispherical top, covered with thousands of beautiful large rose-coloured blossoms, which gratefully contrast with the masses of vivid green, purple, and yellow, that clothe the surrounding trees. Floral treasures are heaped on every side. Wild vines, twisted into most fantastic forms, or hanging in graceful festoons,—passion-flowers, trumpet-flowers, and fuchsias in their native glory,—tree-ferns, whose elegance of form is only surpassed by the tall, gently-curved *palmito*, which is the very embodiment of the line of beauty,—orchids, whose flowers are of as soft a tint as the blossom of the peach-tree, or as brilliant as red spikes of fire,—curious and eccentric *epiphytes*, draping naked rocks, or the decaying branches of old forest monarchs,—all form a scene enrapturing to the naturalist ; and bewildering, with its richness, to the uninitiated, who still appreciate the beauty and the splendour that are scattered on every side, by the Hand Divine. The overpowering sensation which one experiences, when entering an extensive conservatory filled with the choicest plants, exotics of the rarest description, and odour-laden flowers, is that (multiplied a thousand-fold), which filled my

mind as I gazed, for the first time, upon the landscape, with its tiers of mountains, robed in such drapery as that described above; and yet there was such a feeling of liberty, incompatible with the sensation expressed by the word 'overpowering,' that it is impossible to define it. In the province of *Minas Geraes*, from a commanding point, I once beheld the magnificent forest in bloom; and, as the hills and undulative plains stretched far away to the horizon, they seemed to be enveloped in a fairy mist of purple and of gold."

The notices of the geography and natural history of some of the vast regions visited by the enterprising missionaries, are full of novelty and interest. San Paulo, Bahia, Pernambuco, and Pará, are described in a way which will not fail to give "the untravelled" very distinct pictures of them. So, too, are the strange lands which form the basins of the Rio di Francisco and the mighty Amazon. The references to the fauna of the Brazils, are not the least interesting portions of this work. The naturalist will see what scope there is for him in those luxuriant lands, and what promise of discovery of new species is held out to him. Among the hills which stretch away beyond the Bay of Jurujuba, the little, active, buckler-clad *Armadillo*, throws up the earth in which he loves to burrow, and, when disturbed, coils himself up, hedge-hog like, exposing to his enemy only a ball of mail, against which tooth of dog and beak of bird of prey, are powerless; or, when caught on the sunny slopes of the red-coloured hills, he quickly assumes this ball-like form—"swallows himself," as they say—and rolls quietly down the hill as if he were a stone, or some huge cocoa-nut, struck by the feet of the climber. In the neighbourhood of the secluded pools among the Organ Mountains, the *South American Tapirs* spend their harmless lives, feeding on roots, and buds, and wild fruit. The *Peccari* is met in flocks in the wild woods. In size much less than the tapir, the peccari has nothing of the timidity which belongs to its larger neighbour. "It is," says Mr Fletcher, "the most pugnacious fellow imaginable. Neither men nor dogs inspire reverence, for he will attack both with impunity." The *Myrmecophaga*, or Ant-eaters, wander about, making much esteemed havoc on the destructive ants, which swarm in all such climes. "The *Paca*, the *Capybara*, and the *Agouti*—animals of the same family as marmots and beavers—abound. Lurking by the banks of rivers, in the dense jungle, overshadowed with species of palm-trees, the *Jaguar*, or Brazilian tiger (*Felis Onça*), watches his opportunity for springing on his prey. In the northern province of Mato Grasso, vast numbers of monkeys are found. Skipping across the traveller's path, hanging in 'lovely deformity' from the branches of the trees, and looking, with stupid grin, around him, may be seen the

Bald-headed Brachyurus,—the monkey which is answerable for the long credited story of a race of Indians with tails.

Or turn we to the birds, not less varied and novel are the species found in Brazil. There are *Parrots*, in gayest garb, chattering among the trees; *Toucans*, with their huge bills, goggle eyes, and gorgeous plumage; *Humming-birds*, of rare beauty, sparkling in the sunshine, and sipping sweets from tube roses, jessamines, and heliotropes; *Urupongas*, or Tolling-bell birds, looking knowing, with their three inch long fleshy tubercle, hanging sprucely on one side of the head, and their loud, clear, ringing note, which Waterton affirms, may be heard at a distance of three miles; the little known *Umbrella-bird*, frequenting the flooded islands of the Rio Negro and of the Solimões, with its umbrella-like crest, “formed of feathers more than two inches long, very thickly set, and with hairy plumes, curving over at the end—a hemi-ellipsoidal dome, completely covering the head, and even reaching beyond the point of the beak;” the *Boat-bill*, feeding amidst glorious groups of *Victoria Regias*, and the nimble *Jacana*, walking on their leaves, with as sure footing as if treading the solid earth. Then there are *Butterflies*, “the most splendid in the world;” *Bats*, some small as our own, others large as the fabled winged demons of the old naturalists. Such is the terrific-looking, blood-loving *Vampire-bat*. And *Reptiles* in abundance, varying in size from the small scorpion to the enormous *Anaconda*—the *Sucuruju*, of the natives—which haunts the dense forests that stretch along the banks of the great rivers, measuring sometimes above thirty feet in length, and said, by the enterprising Amazon explorer Wallace, to be able to swallow horses and cattle. Is not Brazil a very paradise for a naturalist?

But the half is not told. Those who wish more information on all these topics, and on many others, we refer to the admirable book now noticed. A book which, notwithstanding its occasional idolatry of Brother Jonathan, we very heartily commend to all our readers.

II.—*Missionary Travels and Researches in South Africa*. By DAVID LIVINGSTONE, LL.D., D.C.L. London: John Murray. Twenty-Fifth Thousand.

“IN the whole of Africa,” wrote the author of the *Philosophy of History* in 1828, “there is, besides Egypt, only the Northern Coast, stretching along the Mediterranean, that is at all connected with the history and intellectual progress of the civilized world.”

Though the statement is somewhat too sweeping, as not taking any account of the Cape colonization and the work of such Protestant missionaries in the south as Vanderkemp, Kircherer, Campbell, and others, it was yet in the main true. It is not so now. Representatives of the literature, the science, the religion, and the adventure of the present time, have penetrated into regions in North and South Africa, previously unexplored. Heinrich Barth, James Richardson, and Adolphe Overweg, have done much to open up the north. The dangerous wastes of the Northern Zaara, and the more dangerous tribes who dwell on their borders, have been passed. Half-fabled Timbuctoo has been reached, and we can now read of its streets of mud-built cottages,—of the motley groups which frequent its flourishing market,—of its current coin and standard of value—Salt—and of Kabara,—its port on the Niger, even as we read the pleasant sketches of oft-visited continental towns. Then, we feel that some after generation of travel readers may, perhaps, know as much about Lake Tchad as we do about the Lake of Geneva. Anderson and Galston penetrated from Walvish Bay, on the West Coast, through Damara, on to the flat sandy shores of Lake Ngami. Cumming, the mighty hunter, travelled in search of wild adventure from Cape Town to a point in Southern Interior Africa, far in advance of the remotest missionary station. And now Livingstone, the devoted missionary, the large-hearted Christian philanthropist, and the accomplished man of science, lives to tell us how he found his way into vast regions, and through territories, teeming with population, of whose very existence we had never dreamed. In visiting these tribes, he has made additions to Geography, Ethnology, Natural History, and Geology, by which he has made science always his debtor. The work in which he has chronicled his labours, was long looked for. When it did *not* appear as soon as expected, fears were entertained that it would fall short of the interest which, from the reports that reached this country, and from the importance of the discoveries to the cause of religion and civilization, had gathered around the name of the able, earnest, and enterprising, missionary. And now, that thousands have read the record of Dr Livingstone's wanderings, we believe that there are very few who hold that the book is not worthy of the man, and in every sense a valuable contribution to that great cause in behalf of which he has encountered so many dangers, braved so many difficulties, and undergone so much hardship, suffering, and toil. The unusually large circulation to which it has attained, and the copious extracts of stirring adventure and hairbreadth escapes, which have been made from it by the newspaper press, while testifying to the deep interest taken by the nation in the work to which Livingstone's life is devoted, also

render it unnecessary that we should dwell on features of his work, with which all our readers are familiar. We shall, however, follow his steps in the most interesting portion of his sixteen years life in Southern Africa, and indicate some of the additions which he has made to various departments of science. The views which he entertained of missionary work, when he entered on the wide field to which he was sent, in 1840, led him to those great resolves which he has been spared to realize, and encouraged him at once to set about exhibiting before the heathen, Christianity walking hand in hand with the advanced civilization of Britain. There is much sagacity in his views on this subject. He has a shrewd appreciation of the indirect but powerful benefit which might be rendered to the highest efforts of the missionary, if the churches were more willing, in sending forth their sons to preach to the Gentiles the unsearchable riches of Christ,—to countenance, through them, the extension of commerce and the progress of the industrial arts. "Sending the gospel to the heathen," he says, must include much more than is implied in the usual picture of a missionary,—namely, a man going about with a Bible under his arm. The promotion of commerce ought to be specially attended to, as this, more speedily than anything else, demolishes that sense of isolation which heathenism engenders, and makes the tribes feel themselves mutually dependent on, and mutually beneficial to, each other." These views supply the comment on many of his past efforts, and they hold out the hope of much good for Africa, if he shall be spared to enter again on the work which is before him.

Among the first things that strike us in dealing with his "Researches in South Africa," is the great addition which he has made to our knowledge of the geography of that hitherto little known region. And this knowledge is reliable, as being given by one who has not only visited the territory which he has mapped, but by one who was scientifically fitted for his task. We were recently tempted by curiosity, to look over some of the old Dutch and Portuguese maps, and were interested in noticing that, while several of them indicate that their authors believed the districts through which Livingstone passed to be as thickly studded with towns and villages as he has described them, they show very great uncertainty as to the general outline of the country, and far greater uncertainty in trying to fill in that outline. Manifestly, the maps have been drawn up partly from hearsay and partly by guess. These features of the oldest maps seem to have led modern geographers to err in an opposite direction, and to discard as fabulous everything marked by their predecessors, as lying a few miles from the coast. This, however, gives the greater prominence to the work of Livingstone. If, after having glanced at the

maps which accompany "The Researches," we turn to any even of the best recent maps of South Africa, we will readily acknowledge the great debt under which we lie to this missionary, for his contributions to geography. As we follow the red line which marks his wanderings, we find a teeming population, thriving in regions believed before to be uninhabitable; and cultivated fields, or fertile natural soil, where it was held there were only sterile sandy wastes. In 1843 Dr Livingstone had taken up his abode in the fertile valley of Mabotsa (lat. $20^{\circ} 14'$ south, long. $26^{\circ} 30'$), which may be regarded as the centre from which, at different times, he struck out into the unexplored regions lying to the north, north-east, and north-west. He was now among the Bechuana, a race well known in connection with the labours of his devoted father-in-law Moffat. Of this great family of Africans, he gives us some valuable information. The name Bechuana includes a number of tribes, distinguished from each other by modifications of character and name, associated with their local peculiarities, their habits of life, or, as Dr Livingstone suggests, "probably by their having been, in ancient times, like the Egyptians, addicted to animal worship." Thus, there are the Bakatla, "they of the monkey;" the Bakuena, "they of the alligator;" the Batlápi, "they of the fish;" the Batáu, "they of the lion;" and the Banóga, "they of the serpent"—these last two being, as tribes, now extinct, and represented only by individuals.

Far away to the north-west of Mabotsa, and having the great Kalahari Desert intervening, is Lake Ngami, with the discovery of which the names of Livingstone, and his companions Oswell and Murray, will always be associated. Our travellers set out on a journey of exploration in 1849; and, on 1st August of that year, they were rewarded for many hardships, by seeing the magnificent sheet of water stretching far away before them. The incidents of the journey are full of interest, and the descriptions of the natural history and botany of the Desert are even more so. Bushmen and multitudes of Bechuanas, known as Bakalahari, inhabit the Kalahari. Among the remarkable plants of the Desert, he describes the Leroshúa—which, with a stalk no thicker than a crow's quill, has a tuber, hid by the soil, as large as the head of a young child—the Mokuri, with its water-bearing large tuber, and the Kēme, or water melon—all of them blessings in the locality in which they occur. Of animals, there are the Cape fennec, the small ocelot, the lynx, the steinbuck, lions, leopards, panthers, and hyenas. For the description of the varied forms of life in the neighbourhood of Ngami, and on the picturesque banks of the Zouga, we must refer to the "Journeys and Researches." It is in the account of this journey that we are

first made acquainted with the deadly power of the *tsetse* fly.—(Pp. 80-83.)¹

From Lake Ngami the travellers proceeded northward to Linyanti (lat. 18° 17' 20", long. 23° 50' 9"), the centre of the dominions of Sebituane, a truly noble-minded chief. From Linyanti they proceeded to Sesheke, lying 130 miles to the north-east. "In the end of June," he writes, "we were rewarded by the discovery of the Zambesi, a magnificent river, in many places above 600 yards broad, and which falls into the sea on the east coast about lat. 19°." This discovery led Livingstone to return to Cape Town; and, having seen his family embark for England, and fitted himself for the great undertaking which he lived to accomplish, he set out again for the north. He started in June 1852. "This journey," he says, "extended from the southern extremity of the continent to St Paul de Loando, the capital of Angola, on the west coast, and thence across South Central Africa, in an oblique direction, to Kilimane, in Eastern Africa." Omitting the incidents of the journey from Cape Town, we meet with Dr Livingstone again on the way between Linyanti and Sesheke. Of trees, the camel thorn, the white-thorned mimosa and baobabs, are seen on the elevated grounds through which they pass. Immense herds of antelopes were feeding in the plains, and a new species—"the nakong"—is specially noticed, while "great numbers of buffaloes, zebras, tsessebs, tahaetsi, and elands, graze undisturbed." Canoes and men having been got ready, they launch on the Leeambye, the name given to the Zambesi at this part of its course, and begin to ascend the river. "I felt the pleasure," he says, "of looking on lands which had never been seen by any European before." As they paddled bravely up the magnificent river, they found its broad waters, adorned by numerous islands, from three to five miles long, and covered with forest. Both banks are also clad with a rich vegetation, out from the heart of which stands the lofty palmyra, "casting its feathery foliage against a cloudless sky. The date-palm is also abundant, with its gracefully-curved fronds, and refreshing light green colour." Villages, inhabited by an industrious people, stud its banks, and great abundance of wild animals are everywhere met with. At 14° 11' 3" lat. S., the Leeambye assumes the name of Kabompo, which seems to come from the east. It is joined by the Leeba from the N.N.W. at lat. 14° 10' 52" S., long., 23° 35' 40" E. Having returned again to Linyanti, Dr Livingstone made preparation for another journey, with the view of reaching Loando, on the west coast. He set out in November

¹ We are glad to find that the attention of naturalists is being directed to this insect. May not some of the effects, now associated with its sting, be traceable to other influences?

1853. As they again ascended the Leecambye, they met with new forms of animal life and of vegetation. Of the animals described, one is new. The pokus, which Dr Livingstone proposes shall be named, after the African traveller, Major Vardon, *Antelope Vardonii*. As they proceed, the notes on the social condition and morality of the natives, grow in interest. Everywhere he was painfully impressed by the want of a provision among those immense multitudes, by which they might be told of Him on whom the Lord laid our iniquity. They were now on the Leeba, and the description of the luxuriant vegetation, and of the zoology of the region, reminds one of what geologists find in the carboniferous strata. Hippopotami and alligators abound. "Large climbing plants entwined themselves around the trunks and branches of gigantic trees, like boa constrictors." To the north of Lake Dilolo, they strike off in the direction of Loandó; and, after a month's wandering, they find themselves meeting with more frequent traces of the Portuguese, and of the effects of the civilisation of Europe. On the 31st of May they reached Loando, where his weary spirit was refreshed by the kind hospitality of Mr Gabriel, the English commissioner for the suppression of the slave trade.

After a short stay at Loando, the party again set out; and, changing their course somewhat, they reached Linyanti in safety. Here Dr Livingstone made preparations for another journey. He resolved to follow the course of the Zambesi in its progress towards the east. Accompanied by Sekeletu, the principal men of the Makololo, and about 200 followers, Dr Livingstone set out, on the 3d of November, on his journey from Linyanti to the East Coast. Having halted till dark, outside a part of the country infested with tsetse, when night came, they began to penetrate the dreaded spot. "It became pitch dark; the lightening spread over the sky, forming eight or ten branches at a time, in shape exactly like those of a tree. This, with great volumes of sheet-lightning, enabled us at times to see the whole country. The intervals between the flashes were so densely dark, as to convey the idea of stone blindness. The horses trembled, cried out and turned round, as if searching for each other; and every new flash, revealed the men taking different directions, laughing and stumbling against each other." The thunder-storm gave occasion to a touching act on the part of the African chief. Livingstone's clothing had been sent on by an advanced party; and now, that he had got thoroughly wet with the rain which had fallen heavily, there was nothing for him but to lie down in this state on the cold ground. He did so, but Sekeletu covered him with his own blanket, and lay himself uncovered during the night.

On the 13th they were again afloat on the Zambesi. Strong

easterly winds raised such waves on the broad deep river, as threatened to swamp their canoes, and compelled them to wait till the wind moderated. While waiting, Dr Livingstone was treated to some of the ghost stories relating to the two large islands, which lie a little beyond the confluence of the Chobe with the Zambesi. "The Barotse believe that, at certain parts of the river, a tremendous monster lies hid, and that it will catch a canoe, and hold it fast and motionless, in spite of the utmost exertions of the paddlers. While near Nameta, they even objected to pass a spot, supposed to be haunted, and proceeded along a branch instead, of the main stream. It is strange to find fables similar to those of the more northern nations, even in the heart of Africa. Can they be vestiges of traditions of animals which no longer exist?" Having arrived at the island of Nampéne, lying at the beginning of the rapids above the Mosioatunya Falls, it was determined that they should strike off from the river's course towards the north-east; but before doing this, Dr Livingstone resolved to pay a visit to the Falls. The whole scene is described as extremely beautiful. At the period of their visit, many flowering trees were in their beauty. The burly baobab, groups of graceful palms, the silvery mohonono, and the dark-coloured motsouri, grew luxuriantly all around. "The Falls are bounded on three sides by ridges 300 or 400 feet in height, which are covered with forest." Paddling down the centre of the stream, they reached, in their light canoe, an island "in the middle of the river, and on the edge of the lip over which the water rolls." Here the water seemed "to lose itself in the earth, the opposite lip of the fissure into which it disappeared, being only 80 feet deep." Their present position was not such as to enable them to solve the problem, where the vast body of the water went. But Livingstone determined to get a nearer approach to the edge. "Creeping, with awe, to the verge, I peered down into a large rent, which had been made from bank to bank, of the broad Zambesi, and saw that a stream of 1000 yards broad leaped down 100 feet, and then became suddenly compressed into a space of 15 or 20 yards. The entire Falls are simply a crack made in a hard basaltic rock, from the right to the left bank of the Zambesi, and then prolonged from the left bank, away through thirty or forty miles of hills." To the Mosi oa tunya (Smoke does sound there), he gave the name of the "Victoria Falls." The bold and picturesque way in which the Falls are described, adds much to the interest of this part of the narrative. Some remarks on the geological aspect of the basalt, are suggestive. He tells us, that the edge of the rock over which the river falls, does not show more than three feet of surface wear; and adds, "If we take the want of much wear, on the lip of hard basaltic rock, as of any value, the period when this rock

was risen, is not geologically very remote." They returned to Kalai (lat. $17^{\circ} 51' 54''$ S., long. $25^{\circ} 41'$ E.), where the rest of the party had been left. Livingstone's report so influenced Sekeletu, that he resolved to visit the Falls, and Dr L. agreed to accompany him. The chief was much impressed by the grandeur of the scene. On the 20th of November they bade adieu to the hospitable Chief Sekeletu, and proceeded towards the north. When about to leave the village of Moyara, on the 25th, an interesting fact was made known to them. They learned that the deadly tsetse can be rendered innocuous by pounding into powder the root of a certain plant. It is much to be regretted that the kind of plant from which the powder was alleged to have been got, was not ascertained. On the 26th they reached the villages, under an old chief named Marimba. The geology of this district is briefly described. "The stratified gneiss, which is the underlying rock of much of this part of the country, dips towards the centre of the continent, but the strata are often so much elevated, as to appear nearly on their edges. Rocks of Augite trap are found in various positions on it. The general strike is north and south; but when the gneiss was first seen near to the basalt of the Falls; it was easterly and westerly, and the dip towards the north, as if the eruptive force of the basalt had placed it in that position." The country in which they now were, abounds in fruit. It is so plentiful as always to supply at least one article of food for the natives, and to warrant the saying of the Batoka, "No one ever dies of hunger here." The travellers fared sumptuously. "The tree called Morhuka was now yielding its fruit, which resembles apples. The people brought it to us in large quantities; it tastes like a pear, but has a harsh rind, and four large seeds within. We found prodigious quantities of this fruit as we went along. The tree attains the height of fifteen or twenty feet, and has leaves, hard and glossy, as large as one's hand. My men almost lived upon the fruit, for many days." Then they "obtained baskets full of Manéko, a curious fruit with horny rind, split into five pieces. These sections, when chewed, are full of a fine glutinous matter, and sweet like sugar." They had also abundance of motsouri, mamorho, beans called nju, and the magnificent oil-yielding motsikiri. "We saw here trees allowed to stand in gardens, and some of the Batoka, even plant them—a practice seen nowhere else among the natives."

The graphic account of the black-soldier ants, with which the journal of November 27th opens, is one of the most interesting natural history sketches, in the volume. Many of the Batoka have a very degraded appearance, and are so, both physically and mentally. This is mainly the result of their devotion to smoking the pernicious mutokivane (*Cannabis Sativa*). They become

frenzied under its influence. Its effects on their vision are curious. "Some view everything as if looking in through the wide end of a telescope; and others, passing over a straw, lift up their feet as if about to cross the trunk of a tree."

Journeying on, they pass through the villages of Kaouka, Batoka in alliance with the Makololo, and travel through an uninhabited country of great fertility and beauty. Great trees are dotted over the country, marking the sites of ancient towns. One fig-tree was measured, and was found to be 40 feet in circumference. Buffloes, elands, harte-beest, gnus, and elephants, were seen feeding tamely in the distance. Large rounded masses of granite, containing black mica, were found in the places through which they had recently passed. The outer rind of this, as it becomes weather worn, peels off, and large crystals project on the exposed surface. On the 30th, they crossed the river Kalomo, which is about fifty yards broad, and which joins the Zambesi at some distance below the Falls. They had now reached an altitude of more than 5000 feet above the level of the sea. The geological features of the country continued the same, with the exception of the occurrence of a formation of clay shale.

In the beginning of December 1855, they arrived at the first of the villages belonging to tribes not in friendship with the Makololo. The first reception was very unfavourable, and Dr Livingstone's life was put in jeopardy, by a mad savage approaching with a battle axe, and seemed in the act to strike, when drawn off by the headsmen of the village. On reaching the Batonga, they found them friendly. "Here the women are clothed, but the men go in *puris naturalibus*. They walk about without the smallest sense of shame; they have even lost the tradition of the fig-leaf." After many dangers, they reached the confluence of the Loangwa and the Zambesi (14th January 1856), and found here traces of the Portuguese traders, and on the 3d March they received a hearty welcome from the commandant of Tete. We need not further follow in detail the wanderings of Dr Livingstone, and his devoted party of natives.

The graphic descriptions of the magnificent river, its falls, the geological features of the district through which it flows—and the moral and industrial characteristics of the people who dwell on its banks, or in the neighbouring plains, will be read with delight. The geologist will find many suggestive facts—the botanist will almost wish he were there—the speculative ethnologist, will dream of foundations for new theories, the delight of his heart—the merchant will rejoice in the hope, that those immense regions, so adventurously traversed and so ably described, will, ere long, be opened to the enterprise of commerce—and the man of God, whether devoted to science, to the arts, or

to the direct work of preaching the Truth, will not fail to pray that Livingstone may be spared to realise all that is in his large heart in regard to Africa, and that he may yet see many running to and fro, proclaiming that Word of Life, to the preaching of which among the Gentiles, he has given himself.

III.—*Thorndale ; or, The Conflict of Opinions.* By WILLIAM SMITH, Author of “Etholwold,” etc. Blackwood and Sons.

THIS volume is sure, sooner or later, to have many readers, notwithstanding its defects, to which we shall refer. The subjects treated of, and the style, always chaste and beautiful, often attractively quaint, in which they are clothed, will not fail to secure the attention of the class for whom the work is avowedly written. “We dedicate this little book,” says the Author, in the Introduction, “to the idle hour of the thoughtful reader: to the idle hour, for it makes slight pretensions to instruct; to the thoughtful reader, for it is by the excitement of reflection it hopes to entertain.” Like “Friends in Council,” and “The Eclipse of Faith”—“fiction in form but in their substance true”—it deals with many of those higher forms of speculation characteristic of the cultivated minds of the age.

Charles Thorndale, stricken with consumption, is represented as withdrawing from home-scenes and home-influences and taking up his abode in the *Villa Scarpa*, on the heights above the grotto of Posilipo, near Naples, where in solitude he might “look his last;” and where, as he waited for his change, he might fill up his remaining days with meditations on that which hath been, that which is, and on that which shall be hereafter, both for himself and for the race of man. Devoted to the “habit of the pen,” a common-place book lay continually beside him, in which he jotted his stray thoughts on men and things, “If his thoughts recurred to the past, his book took the form of an autobiography. Page after page would at other times be occupied in recalling the conversation or analysing the opinions of some remembered friend. It was Diary, it was Essay, it was Memoir, the occasion demanded or the humour prompted.” Thorndale died; and Mr Smith, having accidentally strayed into the deserted *Villa Scarpa*, discovered there the MS. Such is the somewhat transparent story of the common-place book.

The opening chapter is devoted to the “Self Review.” This chapter both gives promise of that beauty of thought and expression which meets us richly scattered throughout the book, and contains the key to the “Conflict of Opinions.” We find ourselves in company with a man of deep religious instincts, which,

at every point in the experience of every-day life, are rudely shocked by not finding a world in harmony with their higher longings. Social life is seen standing out indebted to religion for all of true good in it; while it not only refuses homage to the heavenly guest, but in action seeks to cast reproach upon her. The individualism of man is believed to be educated in waywardness—to be petted and made an idol of, and, as a natural result, the interests of the community are held to be sacrificed to the welfare of the few. Thorndale sees the dislocation in society, but does not make the discovery of it in himself. Led once and again to that narrow line at which hope is seen hankering on the very edge of despair, he is kept from plunging into the dark sea out on which life looks, by the presence of an influence which, while our author feels it, we suspect he does not clearly understand. In this, we take it, will be found the main value of the book to all, who, as having themselves entered into God's rest, are seeking to lead others into it. Never, perhaps, in the history of Britain, has Scripture truth influenced the thoughtful so powerfully as it does at present. And yet, the thoughtful are not at rest. In Thorndale we find the free expression of that unrest which may characterise a soul even when in full acquaintance with the *form* of revealed truth. Held in knowledge merely, and not in the love of the True One, it has yet power to sharpen the sentiments, to quicken up into energy sympathies otherwise dormant, and to call forth in strength all those feelings which find natural gratification in the love of the beautiful in nature and in art; but, if held only thus, it has no might in it to keep man in that path of peace, which, though it reaches into the abode of The Ever Blessed, lies on the earth amidst the tangled mazes of a wilderness of misery and of sin—and no might to keep the soul from falling back on itself for peace and joy—just as if light were to be found in the place of darkness, and peace where thought wars with affection, and instincts with conscience. Everywhere this is felt; and the want of present satisfaction is like the trail of an unclean thing over highest delights.

“Why should I live?” asks Thorndale, “What there is of brief and fitful enchantment in this life of pain, I too have partly known. I have heard music; I have seen mountains; I have looked on the sea, and cloud, and flowing rivers, and the beauty of women. I have loved—vainly or foolishly still I have loved. . . . I have given my heart to the poets; I have listened eagerly to whatever great truth science has revealed; I have trod the paths of philosophy till I found them interlacing each other, and leading back to my own footmarks on the sand; I have had earnest thoughts and generous emotions. If I were to live for centuries, centuries would only bring

me these in their decay and degeneracy. What but the withered leaf of summer *has* the winter to bestow?"—P. 26.

A few sentences culled from the chapter on Truisims, will illustrate both the shadowy influence of these abstract truth, and Thorndale's ignorance of the True One—the only manifestation of God in which weary souls can find peace, wayward souls a sure resting-place and refuge, and troubled ones comfort.

"That there is sympathy and love in the heart of man, and that thus his very self, his personal desires, at once embrace the good of others as well as his own—what a truth is this."

Again—

"To embrace the good of others—of a whole society; to apprehend the world in its true divine unity—to feel how beautiful it is! The Good, the True, the Beautiful, as some catalogue them—here are three gifts, than which could God give no greater to His creature?"

Again—

"Determine what you may about the Will, know that the *freedom of the man* lies in his reason."

Once more—

"We may look upon the progress of man as ultimately resolving itself into a gradual revelation of truth to the intellect. His advance in knowledge manifests itself—1st, In his increased power; 2d, In the great contemplation of science; 3d, In that idea of humanity, or of human life *as a whole*, which each one should carry in his own mind, and which should be the fountain source of his morality (!)"

We have read with interest, "The Two Futurities" and "The Future Life," but we nowhere find that Thorndale has dreamt of that which solves the dark enigmas—even that a personal Saviour, Himself very God, has brought life and immortality to light *by the Gospel*. This is the nearest approach to it—

"As men grow better on the earth, they will grow more confident in their great hope of immortality." "Shall I tell you what religion is in its broadest definition? It is life cultivated under God, and in the presence of death. Forget death, and there would be little or no religion."

"The Retrospect" is full of the beauty of those pleasant memories, on which, as we dwell, thoughts like angels cluster all around us. Pity that so much touching sentiment should be destitute of the strength which true faith always communicates! We have seldom met with such beauty of thought and expression as in the description of "Childhood, and the Mother's Silent Affection."

Visions of social utopias pass before him, but as his will has neither been disciplined by truth, nor nursed up into strength by

promptness in action, he fails in every attempt at good doing. Vain resolves pass away in regrets more vain. He has had the full knowledge of social disorganization to no purpose. In Manchester he sees the triumph of white slavery. In London he takes his place among beggars, in order to learn how the lowest classes regard those above them. The result of all is, that he finds the world out of joint. But his own moral nature is in the same unhappy condition; and so, while there is abundance of work needed to be done, he speculates and finds nothing for his hands to do.

Our author leaves the details of the personal experience of his hero, and has recourse to a common expedient to introduce us to forms of thought—of so called religious life—and of social longings, which could not, in their variety, have been consistently associated with one man. *Luxmore* is brought on the scene as the representative of the modern aspirations of the poetic faculty. His *mens divini*or, finds true joy in compounding the naturalism of Wordsworth with the idealism of Shelley. The product, as might be anticipated, is not very healthful:—

“ Delusion, followed by a strange despair;
Life lost—hope lost; in solitude I dwell
Like some pale anchorite, whose faith—whose prayer—
Died in his cell (!) ”

Cyril, having no manly will to battle with the world, becomes pleasantly reconciled to Rome; and, in the picturesque garb of a Cisterian, sets about trying to educate himself up into everlasting life. The cause of *Cyril*'s change is found in the strict Calvinism of his father! The doctrines of retribution and of eternal punishment, are evidently not very palatable to *Thorndale* himself. *Seckendorf*, a meditative German, is introduced as the representative of self-denial; and *Clarence*, as the easy good doer, always dreaming of a social Utopia. The work concludes with the *Confessio Fedei* of *Clarence*. This is worthy of a careful perusal; not because of anything original in it, but because it contains a well written summary of those peculiar phases, social and speculative, into which the traditional Christian understanding is at present running. It deals fully with these, but is shy of everything like a distinct utterance of religious belief. The section devoted to the justice, mercy, and love of God, is written in manifest wilful ignorance of that point at which righteousness and peace meet in harmony, and of that Person by whom grace reigns through righteousness. Strange that the Bible views of these things should be kept at a distance! Yet, but for the reflex influence of Bible truth, such a book as “*Thorndale*” could not have been written. All of strength in the moral tone of it

—and there is much—has been drawn, indirectly, from the Scriptures. Yet the breasts which have nourished the soul are despised. Natural sentiment has been educated and refined by revealed truth, until it begins to look like the truly religious spirit. Yet it yields not to the claims of Christ. Yea, it virtually denies all obligation to Him. This state of matters grows more and more strong, and the only way by which it can be neutralised, is by exalting the person of Christ as very God, and by directing the thoughtful to Him for truth. It must be shown that, while what are called secular forms of truth, have much in them useful to man, apart altogether from the thought of a God of grace in connection with them, they yet become most useful, even in their worldly relationships, when associated with Him. Indeed, without this, those who prosecute them, miss the high end of their lives, and put away from them that which keeps the head steady, as it climbs the heights of knowledge; and the heart sound, as it tries to fathom the mysteries in God's works, and the mysteries of man's spiritual nature.

We have thus indicated the drift of "Thorndale," and, in the light of these remarks, we can assure thoughtful readers, that they will find it peculiarly interesting.

IV. *Supplement to the Fifth Edition of a Manual of Elementary Geology.* By Sir CHARLES LYELL, D.C.L., M.A., F.R.S., etc. London: John Murray. 1857.

THIS "Supplement" will be found more deeply interesting than Sir Charles Lyell's former additions to "The Manual of Elementary Geology." Since the enlarged fifth edition was published, geological discoveries of great importance have been made. These are set down and reviewed in the "Supplement." New phenomena are allowed to tell their own tale. No attempts are made to force them into harmony with opinions broadly stated in "The Manual." On the contrary, Sir Charles, in the candour and dignity of true science, permits the discoveries to modify his former views, and states this to the reader. Such contributions to science all will cordially welcome who see prevailing tendencies either, on the one hand, to refuse any testimony which may seem to conflict with favourite theories; or, on the other, to catch hastily at new facts and to theorise concerning them, without looking at them in the light of other facts, to which, scientifically, they stand related.

In our brief notice of the "Supplement," we shall confine ourselves to such portions of it as have some bearing, directly or indirectly, on some important recent discussions. After a brief

analysis of Mr Scarles Wood's "Monograph on the Crag and Upper Tertiary Shells of Britain," the remark is made, "In the above list I have not included the shells of the glacial beds of the Clyde, and of several other British deposits of newer origin than the Norwich Crag, in which nearly all, perhaps all, the species are recent."—P. 2. The light thrown on the alterations of climate in the successive periods of the Tertiary, by the recent palæontological discoveries reviewed by Sir Charles, is full of interest. These, however, will be differently read by some. Individual theories on glacial action, etc., will determine the point of view from which they will be regarded.

"It is still a matter of discussion whether the submergence of a great part of the south-east of England, beneath the sea of the glacial epoch, during which the northern erratics of Norfolk and of Suffolk, and of Highgate Hill, near London, were drifted southwards by ice, took place before or after the origin of these (freshwater) deposits at Grays, Ilford, and other places on the banks of the Thames; but it is quite clear that, after those fluviatile beds were formed, a great sheet of ochreous gravel was spread out over the lower levels of the same valley, and in it we find buried the remains of Arctic quadrupeds."—P. 3.

Without doing more than refer to the modification of the table of the Tertiary Fossiliferous strata, and to the decided corroboration of the arguments adduced in "The Manual," to prove "that the denudation of the Wealden area took place at many successive periods, and at dates widely remote from each other," we come to what appears to us the most interesting, and, perhaps, the most suggestive pages of the "Supplement." We mean those devoted to an account of the peculiarly important discoveries of Mr S. H. Beckles, in the Middle Purbeck (Upper Oolitic) Strata. The stratum explored lies at the base of the Middle Purbeck, and "consists of a soft marl, or calcareous mud, and is only about five inches thick." These excavations have lately been brought before the public in such an interesting way by Mr Kingsley, that we shall introduce the remarks of Sir Charles Lyell, by giving our readers an extract from Mr Kingsley's letter:—

"A mammal jaw had been already discovered by Mr Brodie, on the shore at the back of Swanage Point. Mr Beckles' business was to trace the vein from which this jaw had been procured, through its course along the cliff above, and to search it as thoroughly as he could. With that practical sagacity and zeal which distinguishes so many of our scientific men, he found the precious vein (a stratum of about five inches thick, at the base of the Middle Purbeck beds), and set to work. Before he could lay it bare, he had to remove a superincumbent load of fifty-two feet thick, forty feet of which was

solid rock; and again and again, after losing the vein, where it was shifted and snapt by earthquake "faults," to try fresh cuttings at fresh parts of the cliff. In nine months he removed many thousand tons of rock, and laid bare an area of nearly 7000 square feet (the largest cutting ever made for purely scientific purposes). Reptiles (tortoises and lizards) he found in hundreds; but the most important discovery was that of the jaws of at least fourteen different species of mammalia. Some of these were herbivorous, some carnivorous, connected (we understand) with our modern shrews, moles, hedgehogs, etc., but all of them perfectly developed and highly-organised quadrupeds."¹

At the end of three weeks Mr Beckles had discovered—

"The remains of five or six new species belonging to three or four distinct genera, varying in size from a mole to that of a hedgehog, besides the entire skeleton of a crocodile, the shell or carapace of a fresh-water tortoise, and some smaller reptiles."

Great additions were afterwards made to these. We must refer our readers to "The Supplement," for the able interpretation by Professor Owen and Dr Falconer of the mammalian remains discovered by Messrs Brodie and Beckles. Most of these remains are those of Marsupial Mammals. But evidences of a higher order than the Marsupalia, as in existence in those remote epochs, seem not to be wanting. Thus Sir Charles Lyell says—

"While the MS. of these pages was preparing for the press (February 10, 1857), part of the cranium of a Mammal was received from Mr Beckles, comprising the two maxillary bones and teeth, with the intermediate palate crushed, of a small insectivore. On the right side of the jaw, the whole series of molar teeth and the incisors are seen. The grinders are more numerous, but the dental characters, says Dr Falconer, bear a relation to those of the insectivorous genus *Ericulus*, peculiar to Madagascar; and from the general bearing of the evidence, it is presumed that the fossil was a minute placental insectivore."

¹ Mr Kingsley adds: "To all which our readers may answer, *Cui bono?* All this may be amusing, curious; but what is its use? Its use is this. It was supposed till very lately, that few if any mammalia were to be found below the tertiary rock, *i. e.*, those above the chalk; and this supposed fact was very comfortable to those who support the doctrine of 'progressive development,' and hold, with the notorious 'Vestiges of Creation,' that a fish, by mere length of time, became a reptile, a lemur, an ape, and, finally, an ape a man. But here, as in a hundred other cases, facts, when duly investigated, are against their theory. A very ancient bed of the secondary rocks is found full of mammalia, as perfect as most which now walk this earth; and Mr Beckles' discoveries give fresh strength to the theory of our best scientific men, that not merely species, but whole orders, were created from time to time, by some absolute act of the Almighty mind, as perfect at the first moment of their existence as at any subsequent one. Thus are the conclusions of sound science shown more and more to coincide with those of sound religion; and every man who, like Mr Beckles, by discovering physical truth, helps the cause of spiritual truth, deserves well of his country, even though all he visibly brings them be a few jaws of unmarketable vermin."

Again—

“ Among the latest discoveries of Mr Beckles (March 19th), is the lower jaw of a small, adult, predaceous quadruped, with a robust canine and only six molars, differing in this respect, as well as in its other characters, so far as the evidence at present extends, from the marsupial type.”

We have quoted these remarks with the view of both showing the rapid march of geological science, and of indicating the danger of hazarding generalisations on the fruits of our present knowledge of the fossiliferous strata—generalisations, to the maintenance of which religious men may, on religious grounds, have pledged themselves. An apt illustration of this may be found in Mr Hugh Miller's last work. He says, “ Not until we reach the times of the Tertiary division do the Mammals in their higher orders appear. The great Tertiary volume corresponds to those volumes of Cuvier which treat of the *placental* animals, that suckle their young.”¹ The lamented author was acquainted with the remains of such warm-blooded quadrupeds as the Stonesfield *Plascolotherium*, *Thylacotherium*, and *Amphitherium*; but as these were undoubtedly marsupials, he rightly assigns to them a place lower down in the geological scale than that assigned to the placentals. The temptation to theorise was such as no one, looking at the subject from Mr Hugh Miller's point of view, could be expected to resist. Does not the geologic history of the various classes of the vertebrata answer chronologically to the classification adopted by Baron Cuvier? Fishes, propagating by eggs or spawn—reptiles, by eggs or spawn—birds, by eggs—mammals, “ that produce *eggs* without shells (marsupials), and last of all, placental mammals, appear.” We fear that the discoveries of Mr Beckles have fairly knocked the alleged correspondence on the head. Sir Charles Lyell remarks that the Purbeck strata read us a most instructive lesson. They had been well searched by skilful collectors. The late Edward Forbes had studied them for months consecutively; and they had been numbered, and their contents recorded, by the Government survey.

“ Yet, when the geologist inquires if any land animals of a higher grade than reptiles lived during any one of these three periods, the rocks are all silent, save one thin layer a few inches in thickness; and this single page of the earth's history suddenly reveals to us in a few weeks the memorial of so many species of fossil mammalia, that they already outnumber those of many a subdivision of the Tertiary series, and far surpass those of all the other secondary rocks put together.”—P. 24.

Attempts have been recently made to show that the classifica-

¹ “ Testimony of the Rocks,” pp. 15, 92.

tion adopted by our highest botanists corresponds with the plant-history in the fossiliferous strata when we read it chronologically ; that is, that the order of appearance exhibits a parallelism between this plant-history written on the rocks and the arrangements of modern Botany. Exception has been taken to this, on the ground that the Old Red Sandstone, which lies deeper down in the earth's crust than the Carboniferous, contains the remains of plants corresponding to the class marked VI. by Lindley—the *Gymnogens*, with concentric growth—wood youngest at the circumference, and having more than one cotyledon,—plants, then, whose organisation is higher than that of the *Endogens* of the Coal Measures, whose growth does not exhibit the regular concentric layers of the *Exogens*, and whose wood stem, as in the palms, is youngest in the centre, while the seed development is in a single cotyledon. Without entering into this controversy, or venturing any opinion in our present remarks on the likelihood of a modification of the arrangement, one way or other, now argued for, there are some pregnant sentences in the “Supplement,” to which we would direct the attention of our readers. They seem, however, to point to the strong probability, that a few years' diligent working in the older strata will reveal to us the remains of the higher forms of vegetation, deeper down in the geologic scale than we have yet fully expected ; or, more likely still, will make it apparent that then, as now, the Thallogens and the highest forms of the Exogens obtained during the same epochs. It would thus be safest for the student of Natural Theology not to seek arguments for unity of design so much in the alleged sequence of phenomena, or of groups of phenomena, in the order of time, as in the organisation of different forms of life, in the adaptation of these to particular ends, and in their relation to other forms. In the section devoted to “the Evidence of Phanerogamous Plants (not Gymnosperms) in the Coal Formation,” Sir Charles says, “It has been questioned whither hitherto the botanist has obtained from strata older than the Wealden a single well-determined specimen of any flowering plants except Gymnosperms, such as Conifers and Cycads. Hence some imagine that the most highly organised structures of the vegetable kingdom were first created or developed in geological periods comparatively modern. Mr C. Bunbury called my attention lately to an Antholite in his collection, which he compared to Antholyza, an Irideos genus, and on which Dr Hooker, to whom I have shown it, has sent me the following remarks.”—P. 29. Without quoting at length Dr Hooker's letter, we need only say that he withdraws the opinion given in the fifth edition of the Manual, p. 374, of the coniferous relation of the *Antholites*. What, however, seems to us of most interest is, that while upon the whole

he thinks Mr Bunbury's specimen bears the strongest resemblance to *Bromeliaceæ* (Monocotyledons), it yet may be plausibly compared to *Labiata* and *Lobeliaceæ* (Dicotyledons.) He considers this Antholite from the coal to be "the spike of a very highly organised flowering plant in full flower," p. 29.

The facts to which we have thus briefly referred, will indicate how very important the additions are which have been made in "the Supplement" to the literature of Geologic Science.

V.—*Omphalos: An Attempt to Untie the Geological Knot.* By PHILIP HENRY GOSSE, F.R.S. London: John Van Voorst. 1857.

IN the preface in which Oken introduced to the English public Dr Tulk's admirable translation of "The Elements of Physio-philosophy,"¹ he says, "I wrote the first edition of 1810 in a kind of inspiration, and on this account it was not so well arranged as a systematic work ought to be." Mr Gosse might almost have alleged as much for the work now before us. But in his case the inspiration is only second-hand, and yet not a whit more trustworthy as to source than that of Lorenz Oken. We suspect, too, that at least one of the quarters to which he traces the suggestion of the "happy" thought developed in *Omphalos*, is indebted to Oken's *Physio-philosophy* for anything of interest about it. "I do not claim originality for the thought I have endeavoured to work out. It was suggested to me by a tract which I met with some dozen years ago, or more; the title of which I have forgotten: I am pretty sure it was anonymous, but it was published by Campbell, of 1, Warwick Square." Again, he adds in his preface, "The germ of the argument, however, I have found, since these pages were written, in 'The Mineral and Mosaical Geologies,' of Granville Penn." This is candid enough. It is not impressive. We cannot hope for much in a scientific treatise based on a thought in a Plymouth brother tract, and seeking corroboration in the speculations of Granville Penn.

We must not, however, withhold our testimony to the admirable spirit in which Mr Gosse sets about his work. He has learned to regard the senses as not infallible guides even in estimating present physical phenomena, and that conclusions drawn from processes of reasoning, by a confessedly fallible interpreter, are even less trustworthy. This is as it should be; and if the present theory of the highly accomplished author of "The Manual of Marine Zoology," and of charming "Tenby," have anything

¹ Ray Society, 1847.

of plausibility in it, this shall not suffer from the manifest Christian feeling and humility under the atmosphere of which the theory is propounded. The difficulty which presented itself to Mr Gosse was this,—there is a manifest (alleged) contradiction between what Geology says of the age of the earth's crust, and what unlearned readers hold to be the plain, direct, and unequivocal literal teaching of the Word of God. Mr Gosse refuses to meddle with the question of interpretation. But why? Is it philosophical to deal with and to discuss the question of geological interpretation, and yet refuse to deal with that of the portion of Scripture on which geological discoveries are held to impinge? He tells us that there is a dilemma; and he believes that his theory—a very old one, with a new face and a new name—is fitted to rescue us from it. But Mr Gosse knows, that while geologists, from Cuvier to Hugh Miller, have acknowledged a difficulty, they have not seen a dilemma, and thus they have propounded what they believed to be the solution of the difficulty. One theory stands associated with such names as Conybeare, Buckland, Sedgwick, Chalmers, Fleming, and Hitchcock. And of this we may say, that though we would not pledge ourselves to it in the face of any future discoveries, yet if means could be taken to ascertain the measure of acceptance it has received, two things would be found true: On the one hand, it would turn out that the alleged unrest among non-scientific intelligent men would be found to have been greatly exaggerated; and on the other, that this theory has actually passed into the public mind, and is powerfully influencing it.

Beginning with the foundations of the world, Mr Gosse gives a series of sketches of great power, and in his well-known graphic way, of the varied forms of life, from their first appearance to the present time. These are illustrated by drawings of much beauty. He passes rapidly in review the *Trilobites* of the Silurian,—the *Fishes* of the Old Red,—the *Reptiles* of the Carboniferous,—and the *Pachyderms* of the Tertiary. These sketches and illustrations are to us the most interesting part of this work; and we only wish we had them dissociated from a hobby, and in a shape in which they would be suitable for the young. They would allure more to the study of this science, as well as give a much more correct picture of what *hath been*, than is done by any "Manual" we have yet seen. These sketches, and the reference to the ten miles deep of fossiliferous strata, in which the forms of life referred to are embedded, give us the state of the question as to the accepted macro-chronology, or theory of the great antiquity of the earth. These strata, then, must have required millions of years for their formation. We are shut up to this. No, says Mr Gosse, I have an alternative. And he pro-

ceeds to try to shake the conclusion, drawn from the existence of the fossils, that the living things represented by them must have lived and died *in situ*—must have, in short, had an existence as species corresponding in duration to the estimated age of the strata. So we would put it. Now, it is at this point that we see Mr Gosse diverging. We submit, that his first task should have been to make out a case in behalf of *prochronism* in the formation of the strata, and then to have treated us to his illustrations from the fossilised skeletons. There are the 40,000 or 50,000 feet of the *Silurian*, with their many thin layers containing characteristic fossils,—the *Deronian*, attaining in some places to a thickness of 40,000 feet, “and composed of fragments of more ancient rocks, which, by a long process of rolling together in a breaking sea, or in the bed of a rapid current, have lost all their angles,” and in which the heaviest pieces of rolled stones are found lowest in the deposit,—and, passing the polype-formed limestone between 2000 and 3000 feet thick, the coal measures at least 10,000 feet in thickness, and several overlying formations,—we come to the numerous Tertiary strata, many of which seem to have been laid down so gently as not to injure even the tiniest shells. Mr Gosse reckons up all these; but what he should have given us some light on is, the consistency of *prochronism* in connection with these, with all that we know of the present processes of nature. Applying this theory to the stratified rocks, it would also ignore the existence at any time in the past of those periods of great disturbance with which the present conformation of the earth is associated. It would say, for example, that when we find fossiliferous strata resting, like flying buttresses, on one mountain and another, rising to their summits and found equally at their base, the time never was when they lay horizontally, as strata now in the course of formation lie, but that they were created leaning, as now, in steep incline on the volcanic mass which supports them! Of course, there is no arguing against this mode of putting the question; and Mr Gosse will have the pleasure of believing that he has not been answered. This “new method” would, however, render every attempt to attain to a knowledge of the course of nature in the past, by looking at it in the light of what is going on around, worse than vain. We will not yield to Mr Gosse in the estimate of the deep value to be assigned to the probability of repeated acts of miraculous interference, but his mode of putting this seems to us absurd. The reply to all this, we know, is, ‘But if it be held, that when among plants the *Exogens* first appeared, they came from the hand of the Creator fully formed and mature, even as man himself did, and had their twenty or thirty concentric rings, which are now to us the marks of their

growth, by which we know the lifetime of the tree, why should we not hold also, that the strata were formed as we now behold them by one creative act?' Mr Gosse may, perhaps, think as little of our physiology as we do of his inductive philosophy in Omphalos, when we say, that the full formed organism *might* have been realised in full maturity, and having species well marked, without the hidden evidences of what to us is suggestive of gradual development. In this supposition we stand on the same platform with our author. It is not very likely that, during all the days that Adam lived, and all the days that the created organisms around him existed, any prying student in animal or vegetable physiology would arise to count the concentric rings of the Exogens, or pull feathers from the peacock's tail, to ascertain whether or no they had a story of the wonders of prochronism to tell to all the generations of the antediluvians! But it is time we should allow Mr Gosse to unfold his alleged new hypothesis. He says, p. 123 :—

"I have, in my postulates, begged the fact of creation, and I shall not, therefore, attempt to prove it. Creation, the sovereign fiat of Almighty Power, gives us the commencing point, which we in vain seek in nature. But what is creation? It is *the sudden bursting into a circle*. Since there is no one stage in the course of existence which more than any other affords a natural commencing point, whatever stage is selected by the arbitrary will of God, must be an un-natural, or rather a preter-natural, commencing point. The life-history of every organism commenced at some point or other of its circular course. It was created, called into being, in some definite stage. Possibly, various creatures differed in this respect; perhaps some began existence in one stage of development, some in another; but every separate organism had a distinct point at which it began to live. Before that point there was nothing; this particular organism had till then no existence; its history presents an absolute blank; *it was not*. But the whole organisation of the creature thus newly called into existence, looks back to the course of an endless circle in the past. Its whole structure displays a series of developments, which as distinctly witness to former conditions as do those which are presented in the cow, the butterfly, and the fern of the present day. But what former conditions? The conditions thus witnessed unto, as being necessarily implied in the present organisation, were non-existent; the history was a perfect blank till the moment of creation. The past conditions or stages of existence in question, can indeed be as triumphantly inferred by legitimate deduction from the present, as can those of our cow or butterfly; they rest on the very same evidences; they are identically the same in every respect, except in this one, that they were *unreal*. They exist only in their results; they are effects which never had causes. Perhaps it may help to clear my argument if I divide the past developments of organic life, which are

necessarily, or at least legitimately, inferrible from present phenomena, into two categories, separated by the violent act of creation. Those unreal developments, whose apparent results are seen in the organism at the moment of its creation, I will call *prochronic*, because time was not an element in them; while those which have subsisted since creation, and which have had actual existence, I will distinguish as *diachronic*, as occurring during time."

We have already referred to Oken's "Physio-philosophy." Such of our readers as know anything of that daring, eccentric, but yet remarkably able and suggestive work, will remember the sections on "the Sphere," and on "Rotation;" and when these are looked at in the light of other passages, they will not fail to see their resemblance to Mr Gosse's circular theory of the Course of Nature. Oken, however, sees no Deity but creation, and says, "All motion is circular, and there is everywhere no straight motion any more than there is a single line or straight surface. Everything is comprehended in ceaseless rotation. Without rotation there is no being and no life."—P. 33. Again: "The metamorphosis is the embryonic transition of the insect, after extrusion from the egg, through the three classes of its circle." "The law is universal. The second and third class of every circle traverse, after birth, the classes to whose series they belong."—P. 543. We might multiply such quotations. But do we wish to identify Mr Gosse's views with those of Oken, when Mr Gosse says—"I am not alluding to any *plan* of nature, but to its *course*, *cursus*,—the way in which it *runs on*. This is a circle?"¹ We have no such wish. We only desire to indicate how the views, and even the peculiar phraseology, of one on whose labours Christian men have been rightly accustomed to look with suspicion, may so influence them indirectly as to give the distinctive cast to their theories even on deeply sacred topics.

Our author does not hide from himself the lengths to which his theory might be pushed. He looks boldly in the face its bearing on matters of history, as well as on those of natural science. The "divining" of Niebuhr, and the "Myth Theories" of theologians whose imaginations scorn all canons of sound criticism, and all rules of common sense, would be found harmless if compared with the theory now under review. We can at least acknowledge the strength of the imaginative faculty in the following:—

"Let us suppose that this present year 1857 had been the particular epoch in the projected life-history of the world, which the Creator selected as the era of its actual beginning. At His fiat it appears; but in what condition? Its actual condition at this moment: whatever is now existent would appear precisely as it does appear. There

¹ Omphalos, p. 113.

would be cities filled with swarms of men ; there would be houses half-built, castles fallen into ruins, pictures on artists' easels just sketched in, wardrobes filled with half-worn garments, ships sailing over the sea, marks of birds' footsteps on the mud, skeletons whitening the desert sands, human bodies in every stage of decay in the burial-grounds. These, and millions of other traces of the past, would be found, *because they are found in the world now*—they belong to the present age of the world ; and if it had pleased God to call into existence this globe at *this* epoch of its life-history, the whole of which lay like a map before His infinite mind, it would certainly have presented all these phenomena ; not to puzzle the philosopher, but because they are inseparable from the condition of the world at the selected moment of irruption into its history ; because they constitute its condition—they make it what it is."

Enough : Mr Gosse has not made out a strong plea for Prochronism. We regret that the writer of the "Manual of Marine Zoology" should also be the author of "Omphalos."

VI.—*The Acts of the Apostles Explained.* By JOSEPH ADDISON ALEXANDER, D.D., Professor in the Princeton Theological Seminary. Two vols. London : James Nisbet and Co. 1857.

We have risen from the perusal of these volumes with the impression, that so ripe a product of scholarship and thought will reach, and continue to occupy, a high place in the literature of Scripture exposition. The inspired history, which forms the subject of the work before us, is now beginning to experience fair treatment. Former English commentaries, or lectures on selected portions, such as those of Sumner, Dick, and Biscoe, came far short of grappling with the plan, the structure, or the contents of the book. What Dr Alexander justly calls the "monstrosities of exposition" perpetrated by German Rationalists—especially the daring speculations of the Tübingen school—have led to the publication of works in which we recognise both a just comprehension of what behoved to be done, and something like an adequate encountering of the difficulties of the case. Hackett, and Schaff, and Baumgarten, are noble examples of what sanctified scholarship can do for the exposition of the Divine Word. And Dr Alexander's work is not only worthy of being placed beside these ; it is, in some respects, deserving of a higher place than any of them. Keeping in view its nature as an exposition verse by verse, designed, moreover, for the general reader—the plan of it thus affording little scope for dissertation or breadth of argument—we regard it as furnishing an eminently able and satisfactory explanation of the text. The author makes no parade of learning—his references to authorities are exceed-

ingly rare ; but he evinces throughout a most extensive acquaintance with the literature of the subject. Vexed questions are fairly met, and undergo a masterly treatment ; while the renderings which have met with general acceptance are brought before us in a fresh and vigorous style.

One of the most gratifying results of modern criticism, as applied to the Acts of the Apostles, is the establishment of its unity of plan. It might once be regarded as "a desultory series of anecdotes or reminiscences ;" it can be so regarded no longer. The patient study of the text, by candid and competent men, has brought out the fact, that a special purpose was before the mind of the writer, guided as he was by the Divine Spirit, and that this purpose has been admirably and successfully carried out. That this should be the case is not wonderful ; it is in keeping with the harmonious arrangement which pervades the works of God ; and we are persuaded that an enlightened criticism has yet to discover many precious illustrations of Scripture being in its several parts constructed on a plan, which was fully before the mind of the writer, while, at the same time, the Divine Author was rendering each part—history, or song, or prophecy—a fitting contribution to the development of His entire design.

It is now fully admitted that the Acts of the Apostles is a second treatise of Luke, designed as a supplement to his gospel ; and that, while his object in the earlier history is to exhibit the experience of Christ on earth, his object in the subsequent one is to record the doings of the ascended Saviour in the propagation and establishment of His own truth. And further, the book is recognised as "a history of the planting and extension of the Church among the Jews and Gentiles, by the institution of great radiating centres at important points throughout the empire, beginning at Jerusalem and ending at Rome." "Ye shall be witnesses unto Me, both in Jerusalem, and in all Judea, and in Samaria, and unto the uttermost parts of the earth." Dr Alexander does not refer to De Wette's observation, that these words contain the whole plan of the Acts, but he remarks that the gradation corresponds to the great periods of the history recorded in the book. In addition to this, he shows such a grasp of the whole subject—such an acquaintance with the tendencies of the time, the condition of the Jewish community, and the evolution of the Divine plan for the propagation of the Gospel,—he treats the text in so masterly and exhaustive a manner, and the exposition is so well sustained throughout, that we are justified in regarding this work as one of the best on the "Acts" in the English language, and probably the best, as it is the last, of the author's productions.

But let us indicate the characteristics of the work before us,

with the view of establishing the high opinion which we have been led to form of it. The first merit of Dr A. as an interpreter—we speak solely in reference to these volumes—is honesty. He deals fairly with the text. While you cannot fail to discover his views on church government and other points, he is never disingenuous. You cannot think of him as labouring to establish a pre-conceived opinion, but rather as seeking to ascertain what is the mind of the Spirit. But Dr A. has not only the moral qualification of uprightness and freedom from bias—he is a scholar, and a ripe and good one. His acquaintance with the original of the New Testament being minute and extensive, the critical and exegetical value of this work may be rated very high. As specimens of wise discrimination and exegetical talent, we may instance the following:—the distinction between the “was taken up” of i. 9 (ἐπὶ ἑρμηνείᾳ), and that of i. 2 (ἀνελήφθη); the reference to θάμνοσι as combining the ideas of wonder and awe, the dread which the felt presence of Deity ever inspires, blending with the amazement produced by the wonderful works of God: his remarks on the νεώτεροι of v. 6, and νεανίσκοι of v. 10; and the very satisfactory view of ἐν ὁλίγῳ, as contrasted with ἐν μεγάλῳ, in xxvi. 28, 29. We are astonished that Alford should consider these adverbial expressions as referring to the *manner*, and not to the *effect* of persuasion. But our author is less successful in other cases. Thus he is manifestly at fault when he renders οὕτως ὁ Πατήρ ἐθετο ἐν τῇ ἰδίᾳ ἐξουσίᾳ, “which the Father hath fixed in the exercise of His own power.” Ἐν τῇ ἰδίᾳ ἐξουσίᾳ seems identical in meaning with the corresponding expression in v. 4. We are at a loss to see that an intimation of the times and seasons having been fixed by God is a reproof of excessive curiosity, while the fact, that He is not pleased to reveal them, is a reason for not prying further. Then “His angel” in xii. 15, must, in the lips of the disciples, have meant something more than the visit of *an* angel. Again, we think Alford’s view of iii. 12 the preferable one, because more natural and more in accordance with the original—“Why marvel ye at *this* man, or why look ye so earnestly on us, as though by our own power or holiness we had made *him* to walk?” And, lastly, while we concur with Dr A. in holding groundless the distinction sometimes made between χρήματα and ὑπάρξεις, as denoting respectively real and personal property, we think he might have suggested that the former conveys the idea of acquisition. Dr A. displays great acuteness in pointing out the force of expressions which would not strike the ordinary reader, as the “and now” of xx. 22, 25, 32; the last being described as “a third effort to conclude, the others having failed as it were from strong emotion and unwillingness to leave them.” But his prime cha-

characteristics are good sense and good judgment. By a kind of shrewdness—an intuitional perception of the fitness of things—he is often guided, and guides his readers, to a simple and satisfactory interpretation of what has occasioned many fruitless logomachies. Thus, how plain his view of xv. 21, as implying that “the continued reading of the Law, in services accessible to both (Jews and Gentiles), afforded some excuse for the remaining prepossessions of the one class, and at the same time left without excuse the disregard or violation of them by the other.” So, on xxi. 30, he says, “The priests and Levites on duty in the temple, when they saw Paul violently dragged out, shut the doors, in order to exclude both him and his assailants, with a view not only to their own security, but also to preserve the sanctuary from being made the scene of a tumultuous brawl.” References like this might be multiplied; but we shall only further notice, as betokening unusual good sense, the remark on the Eldership (i. 441), the explanation of Paul’s change of name (ii. 11), and the author’s estimate of Gallio’s character and Gamaliel’s counsel. The only case in which his judgment seems to be at fault, is the supposition which he brings forward, that the “two men” who stood by the apostles, as they gazed after their ascending Lord, were Moses and Elijah. He admits that this is a mere conjecture, but he evidently regards it with favour. We cannot but esteem Baumgarten’s remark on the appearance of the “two men,” as indicating a more profound thought: “While the going up of Elias may be compared to the flight of a bird, which none can follow, the ascension of Christ is as it were a bridge between heaven and earth, laid down for all who are drawn to Him by His earthly existence. This bridging over of the gulf between earth and heaven had been brought before the view of the disciples from the very beginning (John i. 52); and by this passage also, we may perhaps explain the fact, that after the ascension the disciples are immediately joined by two heavenly messengers, who are spoken of as men. For it is only in agreement with the fact, that Jesus, who had lived with men as their equal, is now exalted into heaven, if messengers descending from the height of heaven stand and speak with the apostles as their fellows.”

In these volumes some able discussions occur. We would single out, as especially worthy of note, that contained in the comment on xiii. 32–37; and that pursued through the earlier verses of the 23d chapter, with reference to the “scene” between Paul and the “High Priest” Ananias. There are some points, however, in regard to which we deem the reasoning of Dr A. less satisfactory. Thus, on xi. 20, he pleads for the reading of the *textus receptus*. The most ancient copies, however,

(as Dr A. admits), give Ἑλληνας, while the internal evidence is very strong in the same direction. There is much force in the considerations, that the term Ἰουδαίους, in verse 19, includes the Hellenists, while καί, in the sense of "also," renders the reading Ἑλληνας quite intelligible; and that, unless it be in this passage, we have nowhere any mention of a work of grace among the Gentiles at Antioch—no germ, therefore, of a Gentile church there. We are not sure that the author is right in his attempt to justify Paul's disregard of the repeated warnings and dissuasives which were addressed to him as he went up to Jerusalem for the last time. He argues that the Apostle was acting under the direction of the Spirit. We can conceive strong reasons for supposing that Paul was not permitted to err in this matter, but the *Scripture* evidence of his being "led of the Spirit" is not plain.

In these goodly and able volumes the accomplished author has laid the Church under a heavy debt of obligation.

VII.—*Hefele Concilien-geschichte.* (History of the Councils.)
Band I. and II. Pp. 827, and 938.

THE productions of German Romanist literature are comparatively little known in this country. Some have read Möhler's *Symbolik*, perhaps, in a translation, in the course of a special study of the Popish controversy; but of the teeming activity of the Romish press in Southern and Rhenish Germany, few are rightly aware. Yet some of these Romanist works are well worthy of attention from the Protestant churches. To a ripe scholarship, a thorough acquaintance with all the phases of Protestantism around them, and not a little intellectual vigour distinguishing their authors, is added a zeal for Romanism, which never misses a weak point in the apologetical literature of their opponents, or neglects an opportunity of commending their church to the attention of rulers, and to the sympathies of cultivated minds. Most of them have likewise the peculiarly influential gift of ability to suit their essays in dogmatic, and in historical literature and controversy, to the apprehension of the general public—a gift, the cultivation of which has been too much neglected by many of our ablest ecclesiastical controversialists. One of the most note-worthy of recent publications in Church History, is the work whose title we have placed at the head of this notice. Dr Carl Joseph Hefele, Professor of Theology in the Romanist University of Tübingen, may be considered, on the whole, the man most worthy to be ranked as a successor to Möhler in the leadership of the Romish ecclesiastical mind in Southern Germany. In his

youth, he gave to the world a life of Cardinal Ximenes, of which a much enlarged and improved edition was published last year. He superintended a good and cheap edition of the Apostolic Fathers, among whom he includes the author of the Epistle to Diognetus. This work has had great success. For a number of years, he, in conjunction with Kühn, Aberle, and others, has been editor of the Tübingen *Quartal-Schrift*, the chief Romanist Review in Germany. Not a few of the most elaborate, scholarlike, and in every sense able articles, in the Lexicon of Wetzer and Welte, are from his pen. But the work on which he means mainly to rest his claim to present and future appreciation; is "the History of the Councils." It is to be completed, in five large volumes. The first two (all yet published) bring down the narrative to the general recognition, in the Western Church, of the decrees of the 5th Ecumenical Council, in the beginning of the seventh century. The work supplies a want much felt. Bunsen has given a readable and accurate history of the Council of Trent, within a moderate compass; but we have no general narrative of the Synods of the Church, except the voluminous works of Mansi, Hardouin, and others. Few, except for a special purpose, will wade through their enormous folios. All students of Church History, acquainted with the German language, will therefore hail with pleasure this new work of Professor Hefele. It is pleasingly and carefully written, without indeed the brilliancy of Hase, or the depth of Neander. It is full of assiduously accumulated research upon all parts of the wide theme. The general, provincial, and mixed Synods, are all embraced; the most important acts given, both in the original Greek or Latin, and also in a German translation. Of course, a Protestant reader will be on his guard against the Romish bias with which the book is written; but that bias is never couched in offensive or embittered language. The British reader will observe, with interest, that the councils held in our country during the period embraced in these volumes, are duly chronicled and annotated. A large part of the second volume is taken up, as was to be expected, with the Three Chapters dispute. This is a strong point with Hefele, and it may be well to look at it. Mosheim describes the controversy in the following sentences:—"The Emperor Justinian (A.D. 514) burned with zeal to extirpate the more strenuous Monophysites, who were called Acephali. On this subject he took counsel with Theodorus of Caesarea, who had returned to Antioch, and also a Monophysite; and he, to pacify the tranquillity of the Acephalists, by stirring a new controversy, and to fix some stigma on the Council of Chalcedon, and inflict an incurable wound on the Nestorians persuaded the Emperor to believe that the Acephali

would return to the Church, provided the acts of the Council of Chalcedon were purged of those three chapters in which Theodorus of Mopsuestia, Theodoret, Bishop of Cyrus, and Ibas of Edessa, were acquitted of error; and provided that certain writings of these men, favourable to the Nestorian errors, were condemned." This was done, but it gave great offence to the bishops of the West. Vigilius, the Roman Pontiff, among others, resisted it. "Justinian summoned Vigilius to Constantinople, and compelled him to condemn the 'Three Chapters.' But the African and Illyrian Bishops, on the other hand, compelled Vigilius to revoke that condemnation."¹ Hefele seeks to clear Pope Vigilius from the charge brought against him by even the most recent and moderate Protestant writers, as Hussey and Hase, of having been raised to the See of Rome, by having promised the Empress Theodora to favour the Monophysites. But the vacillation and questionable orthodoxy of the Pontiff come plainly out in the course of the Professor's narrative, and the case remains as hard a nut as ever for the advocates of Papal infallibility to crack.

The work is got up with all the typographical elegance of the Freiburg press, and is distinguished by a detailed table of contents and a most minute index to each volume.

Dr Hefele lays more stress than we would do on such authorities as Dr Lingard's "Antiquities of the Saxon Church;" and in one or two cases has failed to refer to recent English works on parts of his extensive subject. But this latter censure is equally applicable to German Protestant writers. Herzog's "Cyclopædia," for example, while chronicling third and fourth-rate German ecclesiastics, omits all mention of Joseph Butler, the author of the "Analogy, and of Arnold." It is, indeed, true that Germans may meet the charge; for, to take recent publications on Church History as an example, in none of them, except the very valuable one by Dean Milman on "Latin Christianity," do we find acquaintance with the recent productions of the German Protestant or Romanist. This is not cre-

¹ Hefele, *Concilien-geschichte*, Cent. vi., ch. iii., sect. 10.



THE

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- ART. I.—1. *An Inquiry into the Credibility of Early Roman History.* By the Right Hon. G. CORNWALL LEWIS, Bart. 2 vols. 1855.
2. *The History of Ancient Rome.* By NIEBUHR. Translated by HARE and THIRLWALL. 3 vols.
3. *La Republique Romaine.* Par Louis de BEAUFORT. 2 vols. 1715.

THE tide of favour seems fast subsiding from the “discoveries” of Niebuhr. It will be lucky if the reflux does not rush into reaction. This, in fact, would be an error of excess on the other side. Perhaps, however, in the order of nature generally, it is necessary for the due rectification of the crooked stick of imitation. The impetus acquired by the inert mass of Niebuhr’s followers can alone be overcome by a proportionate excess of force. The evil, therefore, still would be, that this extreme of counter-movement should pass in turn for the truth, and mask the progress of the parent impulse; should be accepted as a doctrine, and not appreciated as a discipline. It is this progress towards the middle line of gravity and rectitude—a progress in effect, although a regress in direction, and which spontaneously takes place upon the one side and the other—that seems most urgent, and now mature, to be determined and directed.

It is gratifying to see this law of all investigation recognised by Niebuhr, however dangerous to his pretensions. “He who contends,” says he, “against noted prejudices, digging to the bottom of them, and resolved to upset their dominion, cannot possibly keep entirely free from excess; he is led into it by the contemptible aspect which everything connected with the old error wears in his eyes. Moderation can only come in after that.”

victory is achieved. Then is the time to look into the erroneous opinion, which had previously been current, for those features of truth which had been crusted over: and the restoring this truth to honour, when purified from what had made it worthless, is a delightful reward, to which an honest man will joyfully sacrifice his hypothesis."¹ This is right honestly and intelligently spoken. And we may hope that the less interested disputants about his doctrines respect too much their author's merits not to abide by his concession.

The real services of Niebuhr to Roman history are various. He has broken up the classic incrustation of routine; or, to speak strictly, not the classic, but the scholastic, the pedantic. He has directed a more intelligent attention to philology as an instrument of exploration in the primeval stage of history. He has effectually, in fine, evolved a large mass of views or elements which, if not strictly truth themselves, may become media of attaining it. He has, then, shattered an obstruction, supplied an implement, prepared materials; and done all these, in the most difficult and the most dignified of sciences. But to those benefits, all and each, there is undoubtedly a drawback.

The first, being executed naturally by the Thor's hammer of his country—by a shower of isolated blows, not by a systematic solvent—imposed its violence for vigour upon even the initiated, and imparted undue authority to results merely negative. The efficacy of philology has been made paramount, if not exclusive, and while the author had conceived it in little better than its verbal compass: he thus was working with a tool of which the nature was known imperfectly; and so far setting, as the adage has it, a blind guide to lead the blind. In fine, the instrument had been directed, not by method, but by intuition. The declared object of the author was, as he frequently expresses it, to *divine* the "internal history" of the Roman people in their infancy. So that, however Niebuhr might have succeeded for his own part, through the prerogative of that *μαντία*, or sort of Greek "second sight," of which he does not hesitate to claim naïvely the gift,² still the value of his process could be scarcely more than personal; the new advance which he impelled must be arrested with his death; the troop of followers, when the dark lantern of the leader was extinguished, would, by the instinct of such natures, rush all back to the old light. And on the third head, the acquired elements must be discredited by this retreat, and be depreciated in themselves, from misconception of their true character. For even discovery has but the value of mere desultory skirmishing, without the method which lays a basis for defending and extending it.

¹ Vol. I., p. 385.

² Vol. iii., p. 318.

But Niebuhr was as loose himself in the conception of his researches, or, in the wonted phrase, his mission, as he has found and left the public. He felt, indeed, his province was particularly the *interior*; what he professes to disclose is the inside of Roman history. And in this point his mere instinct had informed him aright. But on descending into the cavern, the landscape naturally disappeared, and he forgot that the inside was not the *all* of his subject-matter. He did still worse, and set the inside to repudiate the outside, instead of seeing in this a co-part and the clew to the interior. Nay, in the third place, the guide he substitutes is not alone a mere hypothesis, but one that is moreover wrong, as resting on a false analogy. His work revolves on the assumption, that the unknown in Roman history may be concluded from the history of modern nations, his own particularly: overlooking the compound difference of race, epoch, civilization, and even the fact that modern history requires itself a test, a theory. Nor is this cluster of misconceptions at all peculiar to Niebuhr. It is assented to, nay urged, by even the latest of his adversaries, of whose work (which heads our epigraph) the avowed object is antagonistic. "For" (says he, speaking of his own principles) "if they be sound as to the early ages of Rome, they must be equally sound when applied to those of Greece."¹ This universal parallelism of nationalities and ages is still a universal fallacy in all historical philosophy; although, in particulars, its absurdity be often forced on even common writers.

For example, Colonel Mure, in his *History of Greek Literature*, has the following observations, which are quite particular to the question:—"The value of historical analysis as a means of critical illustration, must depend on a right estimate of the special circumstances by which the case supplying the parallel may *happen* to be distinguished. In the present instance, for example, no appeal could properly be made to the theological element of Teutonic fable in elucidation of the Greek heroic mythology, *unless on the understanding that the fundamental principles of the two systems of paganism were the same*; or, at least, that no such difference existed between them as to render illogical or improbable, in the one case, conclusions which might be probable or certain in the other. It *happens*, however, that in respect to the *peculiar* feature now in question, the Hellenic system of polytheism is marked by characteristics exclusively proper to itself, and which preclude, or rather *reverse*, the test of analogy, which it has been here proposed to derive from Teutonic romance."² Here the principle is recognised, though only as a rule of logic, and even urged in refutation of the same Teutonic test: and yet the writer, at the same time, mars the force of his

¹ Vol. ii., ch. 14.

² Vol. i., p. 26.

own objection, by representing the fact it rests upon as but an accident—a thing of “happening”—a feature “peculiar” to a particular case. So faint and fragmentary is the notion, even where it gleams at all, of the pervasion of such national contrasts, not to say of their organic necessity!

To throw some light upon this great order, both for its substantive importance and as a necessary preparation to judge the Niebuhrian controversy, it is requisite to task the reader with a few abstract but obvious principles.

It must be obvious that in every subject the exploration of the “interior” presupposes and depends upon a knowledge of the exterior. The latter aspect is exhibited spontaneously, and to the senses; the other is accessible but to the intellect, and by art. But as those courses of inquiry run adversely to each other—the exterior along the surface, the introverted athwart the body—the speculations are reciprocally thought to be repugnant. The extremes of oscillation are earlier noted in their contrariety, than they can be in their community of subject and impulsion. In the exterior, which precedes, there for the time is no suspicion that entire knowledge of each object is not offered by the outside; and the inquirer, even unconsciously, erects upon this basis a scheme of mere co-ordination, his fancy furnishing the causes. But when the structure straggles off, through the empirical additions, like our own feudal architecture, from all illusion of congruity; and when the intellect, become maturer by this exercise to desire unity, is led to seek it, as the next alternative, in the interior—the so-called essence, then the classics resolve to cling to the very moss of their hoary edifice, and the reformers uproot its basis among the rubbish of the general ruin. And yet the basis of bare fact must be the same in both inquiries. They but repose upon opposite sides of it, as the reflection and the object are observed to do, for instance, on the margin of a lake. But in this state they can be contemplated, the exterior but surface, and the interior but in section, with the distortion of foreshortening. These views, in all things, are harmonized but through the notion of solidity—a notion moulded by their long conflict, and itself opening a third procedure. These three phases of speculation may be rendered more familiar by denominating them Induction, Analysis, Synthesis.

Now, the second of these stages is the place of Niebuhr; and, we may add, it is the province of his nation also, and his whole race. For, as these logical operations have their executory organs in the three progressive ages of individual and of national life—the exterior view in infancy, the interior in adolescence, and the compound and intermediate view of full reality in the mind’s maturity—so are they necessarily accumulated simulta-

neously or in space in the three classes—productive, active, and deliberative—of each community, and, in the expanse of an international community, by three races. What leaves no doubt of this necessity in the case of mind and of society is, that the processes are those which nature observes in animal formation also. She first begins, it is known, the embryo with an *exterior* membrane; she passes next to the *interior*, and outlines severally its various contents; it is only in the third stage, and on the basis of the previous results, that she proceeds to the supreme process of synthesis and development. Such, in short, is universally the order of nature; and the criterion of true method is to follow nature's footsteps. This is done by men collectively, and in proportion to the mass, they being in this state led by instinct or by habit. The guidance, at its minimum in the discretion of the individual, attains the maximum in a whole nation, and still more fully in a race.

Accordingly, in the great machinery that works our actual civilization, these three main organs are presented in due succession and opposition. The Roman nation, which was the earliest, and gave the basis of law and religion, is as distinctively inductive and exterior in even that religion. The induction explains the aggregated gods of its old Pantheon; the exterior, the idolatry imputed to its Christianity. For idol-worship is the merely sensible veneration of that moral nature, which those who feel it not within them must set in matter before the senses. The general character will be elucidated more conveniently in the sequel, as our business for the moment is with the second social organ. In fact, the nation that succeeded to and subverted the Roman power, is with like consonance addicted to the interior and analytic,—a race that speculates and acts from the impulsions of personality, from the suggestions of the subjective, not the impressions of the objective. These very terms and this distinction announce the vast Teutonic family, of which the analytic mission is so well testified by its history. It commenced duly with the barbarous analysis of force, in the invasion and destruction of the government of Rome; but it accepted the sensible religion, being then itself in the stage of sense. With the development, by civilization, of its own intellectual powers, it set to analyse, and overthrow in turn, the Roman religion, in quest of something analogical to the ideal within itself, but which this religion did not contain. This hypothetical interior, this spiritual significance, was thus pursued with the same instinct through the structure of the Church. Arriving later at an aspect of the ancient edifice, still more complex, the analytic race assailed the very history of the Roman people. Preceding here with the two Dutchmen, Cluverius and Perizonius, the movement reached its Luther in the German Niebuhr.

As the definition above advanced of the researches of this innovator was the point to be elucidated by the mission of his race, we need not follow the latter further into details moreover evident. It is this mission that sends the Germans into all the purlicus of antiquity, historical, philological, political, religious, and renders them the powerful quarriers for the new edifice of civilization. As to the organ of the third, the architectural function, which was to rectify the opposite excesses of its two fellows—which was to keep in view conjointly the interior and exterior, to put together by synthesis the materials which they prepared,—in a word, to organize or to *reform* in the proper sense, the later rise into predominance and the residual place in Europe, appear to point to the Celtic race.

But to return to Niebuhr, who is now wrested from a cloud, no doubt as gandy, but also as misty, as used to hide the gods of Homer. He stands, in fact, unveiled in both his merits and defects, with the normality, and even necessity, of the concurrence of the two ingredients. We comprehend the singularity of his pursuits of the “interior;” the deep impulsion which he has given to the study of Roman history, which is the natural preparative for the philosophy of general history; the philological and subjective description of his main instrument, which is the usual Nominalism of his race, advanced to history. We can, moreover, now discern, amidst these positive advances, that the nature of the results is, notwithstanding, merely negative; can see the desultoriness of form, the dogmatism of the spirit, the utter chaos of the facts, the unreality of the hypothesis. And all this, as in the nature of the process of analysis.

In fact, this method moves by turns upon earth and imagination. It does not regulate the facts by one another, like induction: it despotizes them by an opinion or a sentiment of the explorer. It works, as Bacon has expressed it, *ex analogia hominis*. Hence it is of all the fittest for making dupes and reputations, as it presents at once a bait to both the mystics and the materialists. It might be likened, in effect as well as movement, to Virgil’s Fame:—

Ingrediturque solo, et caput inter nubila condit.

* * * * *

Tam ficti pravique tenax, quam nuncia veri.

It is exactly, indeed, the herald, not the bearer, of the truth. From its progressive alternation between fiction and fact, proceeds, as premised, the reaction against the doctrines of Niebuhr. The oscillation takes place frequently within the German nation, which has its periodic swings between Jacobi and Fuerbach. But the more regular antagonist to German vision is the English mind.

It is accordingly this family function that is discharged towards Niebuhr, in set and systematic form, by the treatise of Sir C. Lewis.

The book is thus already characterized deductively. The author quite conformably proposes the rejection, not alone of the hypothesis and results of Niebuhr, but also of the section of Roman history which they concern. Not, however, as wholly false, but as unprovable, and therefore useless. He rejects equally the constitution which Niebuhr gave to ancient Rome, although exempted, in its quality of "internal," from his direct testimony. The rejection is, moreover, scarce consistent in a Whig. The German writer applied to Rome but the same ethnical hypothesis which, in the subject of society generally, inspired Locke with the "Social Compact." But Sir C. Lewis does not discern the weak side of this hypothesis. He seems, indeed, unconscious of all the principles above consorted, and does, in consequence, imperfect justice to Niebuhr, and to the subject. Nor are the principles which he proposes for his own guidance irreproachable. In prosecution of his object, which is thus as purely negative as the researches of Niebuhr, which he essays to overthrow, he will proceed, he says, in point of method, "from the known to the unknown," and will accept as valid testimony, but "contemporary witnesses." These are, doubtless, prepossessing guarantees to certain readers. But let us look a moment at the proposed application.

In the Aristotelian process, from the known to the unknown, what is it that can properly be meant by the former term? Assuredly, not complete knowledge, while kindred matters remain unknown; the connexion implied, forbids so trenchant a distinction. The "known," can therefore mean no more than the recognisance of sense, and the procedure would be said more justly to be from the sensible to the abstract. It is the march, above explained, from the exterior to the interior. But, thus defined, it is ill applicable to the scheme of Sir C. Lewis, who keeps his survey to "external evidences,"—meaning, doubtless, to bare facts. For facts can never make known other facts, or be themselves known, except through principles. The author, therefore, when he commences his inquiry with the age of Pompey—of which period he supposes that the history is fully known,—and proceeds backward by this clow, deludes the reader, and no doubt himself. The institutions, and thus the events, of any particular age or country, can be known, be understood, but through its antecedent history. It is the force of this necessity that draws, in spite of constant failure, the inquiries of the thoughtful into the infancy of nations. In point of form, then, the course of Niebuhr was less fallacious, in beginning, as he has

it, in "the night of remote antiquity." Though in the dark, the guide he used was better known, being his own race; and he applied it in the order of simplicity and nature: the error lay in his supposing it in full analogy with the subject, whereas they largely were to each other as incommensurable quantities. But to eliminate the results, was the province of an English adversary; and hence the normal opposition of the method of Sir C. Lewis.

The like objection and allowance may be applied to his test of evidence. "The credibility," says he, "of early Roman history, as of every other history, depends upon its being traceable to the testimony of contemporary witnesses" (vol. i. p. 19). This common-law criterion is at all events characteristic. It is, moreover, quite at fault in even this technical rigidity. At *nisi prius* even, the decision does not depend alone on testimony; the merits are evolved but by the arguments of counsel and the effect, almost mechanical, of their reciprocal confiction. But this is more or less effected for ancient history by lapse of time. The throng of unessential circumstances, and incongruous opinions, that beset with their distractions the contemporary writer, and leave his narrative scarce the coherence of a sick man's dream, have dropt away; the dust is laid, the din is lulled, and we survey the field at leisure. The leading features of the action are presented in the results, and are ecclectically stamped upon the memory of tradition. Imagination enters largely into the portraiture, no doubt. But what is all primordial history, and even the classic one of Greece and Rome, as this is daily hashed anew by the most sceptical, but a romance? Without philosophy, the only cement of historic narrative is fiction. Nor does this requisite at all invalidate the credibility of the facts; when understood, it is a costume that, on the contrary, characterizes them. It was the meaning of Aristotle, in deeming poetry more *true* than history. So absurd is it in Sir C. Lewis to call for witness to primitive history! But the real import of the perverse exigence is here again antagonism, the reaction of empiricism against illusory hypothesis.

Upon this puzzle of historians—the distinction of fact from legend—we may venture to condense the foregoing notice in a general formula. *The legendary element relates to causes or to consequences; the effects, the facts themselves (allowance being made for higher colouring, reflected on them from either source), may be substantially relied on; and more especially if cause or consequence themselves of something known. Such is the rule which most antiquaries—among others, Mr Grote—pronounce, after long disquisition, to be completely "unassignable."*¹ This historian is right, however, in rejecting Clinton's talk,

¹ Hist. Greece, vol. ii. p. 50.

which is scarce more indeed than a mechanical attempt to "split the difference."¹ And Sir C. Lewis, we see, will neither cut nor rip the Gordian Knot, but takes the course of throwing aside the whole compound in the lump. He gives, however, a description of the infant state of Roman history, which might seem fashioned to exemplify the explanation now submitted.

"The characteristic peculiarity," says he, "of early Roman history is, that the marvellous, romantic, and poetical incidents are intermixed with dry, historical, and statistical accounts; that stories which bear all the appearance of fiction, which violate all the canons of internal probability, and which are quite consistent with the hypothesis of a poetical origin, are preceded, accompanied, and followed by narrations which have all the air of truth, which observe all the laws of historical probability, which present nothing picturesque or touching, or attractive to the imagination; and which, if we are to suppose them fictions, would seem to have been written by a Roman Defoe; by some ingenious author, who composed fiction with the deliberate purpose of making it pass for reality."—Vol. i., p. 228.

Notwithstanding these defects, in both his project and procedure, he has distinguished well the opposite defects of Niebuhr; and this discernment goes to confirm the polemic import assigned to his book.

"The main cause," says he, "of the great multiplicity and wide divergence of opinions which characterize the recent researches into early Roman history, is the defective method which, not only Niebuhr and his followers, but most of his opponents have adopted. Instead of applying those tests of credibility which are consistently applied to modern history, they attempt to guide their judgments by the indications of internal evidence, and assume that the truth can be discovered by an *occult faculty of historical divination*. Hence, the task which they have undertaken, resembles an inquiry into the internal structure of the earth, or into the question whether the planets are inhabited. It is an attempt to solve a problem, *for the solution of which, no sufficient data exist*."—Vol. i., p. 13.

Considered in the light of the preceding explanations, this single passage defines the position of both the author and his adversary.

In addition to the controversial or reactionary value, the book of Sir C. Lewis compiles the learning of the question. This seems gathered with much industry, if not with more assistance. But the collation and the criticism are not striking for force or freshness. To say the truth, the crudition is not only bookish, but blue-bookish. The impression which it leaves is cold, colourless, statistical. It speaks the writer a man of either mere facts or mathematics—walks of study wherein the counters disuse the

faculty of reflection. There is not only no philosophy, in a systematic sense, but even the fragmentary use of any betrays the strangest inadvertences. A single instance will mark this character of an ambitious empiricism. Sir C. Lewis takes occasion to pronounce the *ve victis* †—that oldest Gallic *mot* on record—a “manifest absurdity.” And why? Because it is not to be thought that this barbarian could speak Latin! The author, then, must be of opinion that the foreigners whose speeches are reported by Herodotus, Polybius, Livy, Tacitus, must have harangued, or been presented as haranguing, in Greek and Latin? No, surely; but the mind is apt to nod upon a patch-work, every piece of which demands a special effort of reflection. It may be added in excuse, that he appears to be, in this instance, in what we fear is rather an English humour with the Gauls. Constrained to recognise this race, as being in even its barbarism the only people that ever conquered, and always terrified the power of Rome, the philosophical and liberal author can only style them “strange savages.” Ay, *strange*, indeed!

This allusion to the Gauls recalls the part above referred to, as played already by Celtic intellect in the discussion of Roman history. Its principal representative is Beaufort, an exiled Protestant, and who combined, in this capacity, perhaps, analysis with synthesis. Long anterior to Niebuhr, he analysed, in his Dissertations, the early history of Rome, with as much absoluteness as the German. Indeed the latter does little more than push his principles into the details, although he vouchsafes to the author but a single and a slighting mention. Beaufort, also, derived himself, no doubt, the notion from its due originators, the two Dutchmen already named, and in whose country he then resided. The strictly Celtic characteristic lay in not stopping with the analysis, but rather viewing it as a necessary preparation for synthesis. He, accordingly, next proceeded to recompose what he had destroyed, in his principal production, the “Roman Republic.” His rules for reconstructing the dubious portion of Roman history are, first, says he, “Rejecting the doubtful facts, to adopt but those of which the proof is furnished by the sequel of the history; those events which *must necessarily have taken place*, and of which the succeeding events are in some sort the consequence. And, secondly, to take those test events but from what had been the practice in the best days of the Republic, and from its fundamental maxims.”¹ It is the method, we perceive, adopted partly by Sir C. Lewis. The difference is, that his procedure is one-sided or backward only, while that of Beaufort moved alternately back and forth, from proofs to premises. Another difference no less essential is, that the English-

¹ Dis. Rct., p. vi.

man looks for witnesses, while the Frenchman would have "consequences," and organical "necessities."

But from this formidable programme, the execution falls wide away. Indeed, the author never once makes any systematic use of it. The rules can have at most subserved the survey as private monitors, in his discursive exposition of the Roman usages and institutions. In this he fell back to the desultory and analytic form, which is afterwards resumed by Niebuhr, its natural organ. The treatment is indeed contrasted, in circumspection and rationality, with the rhapsodical and arbitrary dogmatism of the violent Teuton. But, after all, it was but stone-cutting, not edifying the building. Beaufort raised, then, but the porch, or rather only a propyleum, which stands an eloquent and honourable monument of prematurity.

There now remains that we unfold the strict necessity of all such failures, and sketch, if possible, the great prerequisites to this and similar undertakings.

"As rivers," observes Niebuhr, "flow into the sea, so does the history of all the nations around the Mediterranean terminate in that of Rome" (vol. i. p. 3). Not merely so, in truth, of all nations around the Mediterranean, but also around the globe, in the antecedent civilizations. The reason is the same,—the difference merely of degree. It is, consequently, from the tenor of such ulterior antecedents that we may gather the clue to history, at Rome or elsewhere, late or early. The law, or laws, of this procession cannot, however, be canvassed here. They have, besides, been above indicated, both in method and society, by the name of the productive, the destructive, and constructive forces. These were seen to be represented, in the actual epoch of civilization, by the Roman, the Teutonic, and the Celtic races respectively. Considered governmentally, they are familiar in general history by the appellatives of patriarchal, of warrior, and republican: That is to say, by governments of faith or filial veneration, governments of force or numerical volition, governments of intellect or social organization. Of course, these characters are not exclusive, they being accumulated, in each nation, race, or system of communities, as a condition of subsistence. It is but relative predominance that gives to everything its *character*. And this predominance of special character must be found more or less decided in proportion to the age,—that is, the stage of the whole progression.

With these precautions and explanations, the three principles are now submitted as the true key to all history, and the sole one to its infancy. It may be proper to exemplify, however slightly, the two former, as more immediately concerned in the question under notice. For the solution should show a positive criterion

for Roman history, and at the same time, that the Teutonic one of Niebuhr must be preposterous.

The first position, therefore, is, that the known history of the Roman race implies the principle which, in the abstract sense of power, we name *paternal*. • The national life will be abundantly submitted to the test, if we survey it in the institutions, usages, and literature.

The highest and earliest of the known institutions is the kingly office. But the Roman kings were "shepherds of the people," like Homer's monarchs. Niebuhr himself compares them to these heroic kings of Greece, with the difference of being a magistracy only for life. A difference, indicative of due progression in the second principle, of which the character is the intrusion of election upon inheritance. For, as the embryonic life of physical man is known to traverse all the forms which are permanent in the inferior species, so does the infancy of each nation repeat the previous steps of progress. The warrior principle, which, in Greece, had but *succeeded* the hereditary, came, in Rome, to be *confronted* to it, and thus corrective and co-operative. Hence the mixed or double character presented by the Roman kings, with a progressive inclination to the rising element of the *populus*. Hence the excellence of the famous constitution of Servius, which was a compromise of property or *paternity*, with *personality*, and at the juncture, when the two forces trembled still in transient equipoise. The Tarquins became decidedly the organs of the popular element; and hence their final expulsion, of which the fathers were the true authors. The very epithet, "Superbus," betrays patrician animosity; the multitude, with no pretension to the complacency of its kings, cannot experience the correlative resentment at their haughtiness. The by-name never once occurs amongst the thousand designations imposed upon European monarchs by the people in the middle ages. The current error, which views the fall of the Roman royalty as a popular movement, is unmasked also by the fanatical proscription of the very name; for this device has quite the stamp of priestly management of the multitude. If the aversion had been popular, the abolition would be complete; the name of king would be effaced from the entire official catalogue. But the hostility being patrician, it is found acting with more discernment, allowing the title to remain where it was for, not against, the fathers, as in the "*King of the Sacrifices*," and in the "*inter-rex*,"—both offices exclusive to the patricians, and elective; and offices, moreover, not honorary merely, as the former controlled the action of the comitia and thus the law-making, and the inter-rex had (like the kings) the appointment of the magistrates. The popularity of the kings is further notable in the circumstance, that statues of them lined the

forum in its most democratic days; and with the Romans, the plastic image was little less than the original. That their respect for those prime magistrates was that of children for a father is attested, in fine, expressly by a curious passage of Cicero. He observes, in the *De Republica*, that the Romans viewed the kings, "not as masters or heroes, or even as kings, but as *guardians* of the country, as *fathers* and gods. That they regarded dignities, honours, and life itself, as conferred on them by the justice of the king." And the philosopher assures us, that "this sentiment of his countrymen would have remained unaltered to all posterity, if but the kings, on their part, had remained unchanged."¹ Cicero, who, though a plebeian, was a fautor of the patricians, received their pass-word, that the change was against the people, not against the fathers. But in truth the kings were prototypes of the tribunes of the people, their political or civic fathers, in opposition to the caste paternity.

As to these Conscript fathers and their institute, the Senate, they present the incarnation of the principle in question. It would be sufficiently proved by the predominance which this body really maintained to the last in the direction of the Republic. It was implied in the name of Senate, and the several senators were termed fathers. The functions even of the principal executive officials were paternal, in the sense of being despotical or absolute. The tribuneship, alluded to, began with even being a priesthood,² and continued to be sacrosanct as well as absolute within the city. The consuls occupied the same position towards the provinces and the patricians, and might exert it universally by a decree of the Senate. The dictatorial power was the paternal in its last extension. In fine, turning to the other and lowest extremity of the commonwealth—to the fundamental institutes of property and family—we find the ownership of the territory vested in the republic, by which was portioned out the use, as by a father to his children. So deeply engrained was this sentiment, that, on the adoption of new citizens, any property they might possess was to be first delivered up to, and then received in form back again from, the State. It is this primitive, or this paternal apprehension of society, that occasioned the agrarian agitation and legislation, which made so large and dark a figure in the polity of Rome, and which is still, like most of the rest, so insufficiently explained.

In the family, this principle of fatherhood is normal. It is only its peculiarities in the Roman that can be probatory. Such there are, in fact, and in a measure without example

¹ Nec heros nec dominos appellebant eos quibus juste paruerant, denique ne reges quidem; sed patriæ custodes, sed patres et deos. Vitam, honorem, decus sibi datum esse iustitiæ regis existimabunt. Mansisset eadem voluntas in eorum posteris, si regum similitudo permansisset.—*De Rep.* L. I., xli.

² Niebuhr, vol. i., p. 331.

naps in history, not excepting those Roman prototypes, the Egyptians and the Chinese. The Roman father had not only an absolute power over, but an absolute property in, his family as well as slaves. Indeed, the power was more unlimited over the children, whom he was free to punish, sell, and kill, at his mere whim. And the distinction is remarkably confirmatory of the principle; for the father produced the children, but not the slaves. Nay, this fierce despotism might pursue, by right of blood, the hapless progeny into the third or the fourth generation. Not that the principle of paternity was stronger in the Romans than it had been, and is still, for example, in the Chinese; it is because it was grown weaker, as a result of the social progress,—because the spirit of emancipation was fermenting in the family,—because the children in the Roman families were stimulated to revolt by the example of the plebeians, those revolted children of the State. For the severities of legislation betray the pressure against which they strain. But the existence of this legislation to the latest moment of the republic, must be considered as demonstrative of the predominance of the spirit. In short, there scarcely was synecdochic in the language of Virgil:

*Dum domus Ænea Capitoli immobile saxum
Accolet, imperiumque PATER ROMANUS habebit.*

This “Pater Romanus” was effectually the ruler; the nation but a mere conglomeration of “houses,”—the republic but a vast confederacy of family despotisms.

In the Manners, the general absence of abuse of this despotism, which is remarkable in Roman history, is a fact concurring to the same conclusion. It could prevail but where the power was still in season, and therefore salutary. This correlative condition of mental infancy is indeed manifest. It is conspicuous in the puerile and all-pervading superstitions that awed the Romans, no doubt patrician as well as plebeian, to the last. Their history is more miraculous than the divine one of the Jews. Their machinery of prodigies is of a nursery simplicity, and yet related with the same gravity as the sober facts by their historians. Indeed, so implicit is their credulity—this hereditary stage of intellect—that Polybius ascribed the greatness of the Romans to their superstition; but, with the subtlety of the Greek, and the subjectivity of foreign judgment, he thought the system a fabrication of the fathers to rule the people. He did not see that it was a growth of the popular mind itself; and, instead of being an external cause, was a co-effect with their general manners. But what we are particularly to advert to is, that the efforts of this infant reason are all found to turn duly, in its explanations of even history, upon the family relations.

Thus the city had a founder who was *suckled* by a wolf. It

was populated promptly by the rape of the Sabine women. Its regal tyrants were got rid of through the ravishment of Lucretia. The decemvirs were overthrown through the father's sacrifice of Virginia. The city saved from the Volscians, through the wife and mother of Coriolanus. The Punic wars were an effect of the curse of Dido on the faithless Æneas. This fabled founder of the Roman State had left his native for the new home, with his father on his shoulders, his son beside him, and his wife behind. And the heroic attribute, by which a Roman so late as Virgil would most extol him, is filial *piety*—whence the epithet so enigmatic to the pedagogues. These are samples of the legendary history above defined, as well as proofs of the pervasion of the principle of paternity. This principle is even elevated to an axiom in the national manners, by that famous ultimatum of Roman reason, the *mos majorum*. The genius of the nation is limned by Ennius in a line :—"Moribus antiquis res stat Romana virisque." The hereditary manners correspond to the patricians; the great men, to the warrior element; which was conducted by those antique leading strings. The rude chronicler, with the advantage of the native sympathy and instinct, explains this better than the philosophical but foreign Polybius. Even Cicero can see no refuge for the tottering republic, but in returning to those ancient manners, and in praying the advent of a new Numa; one who should manage, says he, the commonwealth as a "good farmer" does his land.¹ The simile, like the expedient, characterizes the paternal spirit, in its lawgiving, agricultural, and traditional concomitants.

The same paternal and filial concert that presided in the politics, and that accumulated mythically in the usages of Rome, must, in the literature, also, present authority instead of argument; imitation, not originality; induction, not analysis. The resistance of the fathers to the popular culture, that saps their power, retards the rise in such a nation of any literature at all. And when at last, and despite those obstacles, a Roman literature did appear, it was a thing of imitation, and even thus, but a mere literature; that is, it was confined to poetry, oratory, and history—walks of mind wherein the language, the expression, is the chief ingredient. This, in fact, was not opposed to the authority of the fathers, which it defined without discussing, adorned without innovating. Even Cato, their rustic type, could accept language from the Greeks. As to the imitative character, it is notorious in Roman literature. The Romans themselves avowed it, proclaimed it even on the stage. A fact attesting their magnanimity, say the classical philosophers. A fact attesting, as we now perceive, but their stolid contempt for in-

¹ De Republica.

tellect. A London milliner or barber may own to imitating French fashions, with the addition, that such frippery is beneath the genius of an Englishman; but our purveyors of Paris farces will brave all penalties to mask their thefts. The reason is, that mental labour is more proud, because more prized, in even England, than it was in the most cultivated age of Rome.

The only native contribution of the Romans to their literature, was the facts; and those they did not, in the *mot* of Sheridan, invent. It would be, doubtless, to their credit, were it less their incapacity—that mental rudeness which took for “lying” the Greek fertility of intellect, and branded even the trader sharpness of the Carthaginians as studied perfidy. Those facts alone, in the condition of traditions, events, usages, are the materials of their poets, no less than orators and annalists. Virgil, who alone of them, as Niebuhr observes, has even attempted a construction, has merely taken it from Nævius (who himself chronicled the story from the popular tradition), and for the episodes and ornaments, drew on the Homeric epics. Ovid versified the ritual and theology of the nation. Lucan declaimed a gazette in rhapsodical hexameter. Lucretius did but translate the most materialist of Greek philosophers, and is, however, the highest effort of the nation in speculation. Cicero was a compiler, or rather, “crammer,” not a philosopher. We dare assert that his whole writings do not contain a single thought that is not found in even our remnants of Greek philosophy and letters. Even in politics, the study and the practice of his life, when at the close he comes to treat them systematically in his Republic, he does not seem to have augmented, by the simulacrum of a view or principle, his stock from Aristotle, Plato, and the *mos majorum* of the constitution. Indeed, the circumstance is the most singular illustration of the national character,—a character of receptivity and transmission, not exploration. Accordingly, the real excellence of Cicero is style. The *curiosa felicitas* is the forte of the nation generally, as it is apt to be of individuals undistracted by native thinking. In Seneca, the trait degenerated to that diletanteism, which drove Quintilian to rebuke him as corrupting the language, and which would prove his Stoicism as factitious as his style.

The orators were equally devoid of invention. The shortest way to prove it is to note they were all lawyers: Cæsar was, perhaps, the only exception. “None of our people,” says Cicero, “studies eloquence, unless for the business of the bar and the forum;”¹ whereas the Greeks, he adds, make this and most other modes of culture an object of pursuit for the intellectual enjoyment. The historians were naturally still more pragmatical.

¹ *Nemo enim studet eloquentiæ nostrorum hominum nisi ut in causis atque in foro eluceat.—De Orat.*

Indeed, the Romans had hardly any in the Greek or modern sense. Their writers of this kind were, in effect, and even title, from Fabius to Tacitus, all *annalists*, not historians. And how should they do otherwise, in this as all the rest, than observe the *mos majorum* of the Pontifical Annals? The name of *history* and the notion were, like all art, brought in from Greece; the native term being the pragmatic and paraphrastic *res gesta*.¹ Sallust, who himself was at the head of this class, appears so conscious of his country's imperfection in the article, that he essays, sententiously as usual, an explanation. The Romans, says he, were too busy in *acting* history to write it. The American republicans make the same answer to a like taunt. And the bare fact is in both cases correct; but the inference runs counter to the aim of the apologists. If the Romans did in fact rather act than compose history, it was not as a matter of election, but of necessity. Nations must obey, still more than men, their leading faculties, and the complexion that fits for action disqualifies for writing. The two functions are as opposite as their muscular and nervous organs. A nation of empirical production and paternity, could not be possibly a nation of construction and philosophy. Accordingly, the highest or only of the essays of the Romans which reached historical *composition*, has degenerated into poetry. The florid style and strain of Livy was as poetical as Virgil's. He even rises, or rather relapses, into occasional hexameters; for metre is the swathing-bands or go-cart of infant history, as was exemplified at Rome itself in the two earliest of its chroniclers. It is the source of the famous fragments of the pretended ballad-poetry, which the divining gift of Niebuhr has detected in the style of Livy. It is the result of a tacit effort to link the narrative by sound, for want of logical analysis and ordination of the sense. It is this want that gives the other Roman annalists that abruptness which is in Sallust admired as energy, and as profundity in Tacitus!

This destitution of organizing power is a correlative of paternity, which dictates by authority, and does not dispose by reason. The Romans have accordingly never organized anything. The jurisprudence, their only systematic product, was a mere growth—an aggregation of experimental and precisely defined rules. Their vast empire was held together by no other tie than force, and therefore crumbled at the touch of the same wand that had created it. So little was there a conception of organical assimilation, that they left each conquered people not alone its religion, but laws and language. With the good fortune of other

¹ The national contrast is engraven, as usual, in the terms. *Res gesta*, means, literally, *governmental administration*; while *history* (from *hístō*) means, to *inquire* or *explore*.

impotencies, this has passed for liberality. The Romans never could abstract government from the despotic and paternal power. With all their efforts and experience in controlling its abuses, they never fancied means less crude than the limitations of place and time. The dictator was universal despot, but for some months. The consuls, too, were despots, but for a year and outside the city. The despotism of the tribunes was confined by the city walls. The proconsul was a despot, but for few years and in his province. In fine, the *pater Romanus* was perpetual despot, but within his family. So imperceptible to the external or sensible vision of this nation was the vast tissue of relations that bind and balance the social system. The very army, which through their mental youth and inertness received such discipline, so far from having been a product of deliberate organization, took, on the contrary, its very name of *exercitus* from routine practice. In fine, this national characteristic is maximized by their poet Ovid, who sings—

Solus et artificem qui facit, usus erit.

With due allowance for times and circumstances, it were easy to pursue the same aggregate of characters in the descendants of the Romans—a persistency implied by race as special organ of a social function. Indeed, the reader has all along, we trust, been making the application, and receiving new light upon the famous Italian politics. These, in fact, continue still but what they always have been—despotic. The various governments which the Italians have crumbled into, from their weak cohesion, are to this day the most oppressive as well as absolute of Europe. Their “free cities” of the middle ages were despotisms in rotation, alternations of factions butchery, proscription, and plunder; it was Marius and Sylla reproduced in a score of miniatures. They never had a written constitution, or even a legislature; and the office of the prime magistrate received its name from despotism. The very intellect or spirit—that sole essence of all freedom—has been embodied by the Italians in the most absolute of tyrannies; and, what is equally characteristic, they have given it the name of *father*, or rather *papa*, with the sort of childishness which they have stamped upon their whole language. Their public champions of liberty employ for arguments but daggers, just the same as in the days of Brutus, Cassius, Cataline, and the rest.

The manners, too, continue as *paternal* as the institutions. The Italians are divided into “houses,” or tribes, no less effectually than were the Romans of the age of the elder Cato: they merely lack the public life to call their muster into the marketplace. Indeed, the family with the city remain still, as of old, the utmost sphere of the political vitality of the race. All be-

yond is but a void to them, which they denominate "Italian unity," without a dream of the organization which alone could henceforth realize it.

Nor is the literature an exception, as might be fancied, from current notions. It offers all the same defects and the same excellencies as the Roman. It is chiefly poetical, historical, oratorical; but the last in the guise of sermons—the pulpit being the modern rostrum. The poets are also, like the Roman, rather objective than lyric, rather narrative and descriptive than emotional and analytic. Even Dante, who will be owned the most ideal of the number, did but paint what to his age, if not himself, had been realities.¹ There is not, perhaps, throughout the poem a single incident of pure creation—one not furnished by tradition, or theology, or actual history. What is more striking, though the whole action appertains to the spiritual world, the poet never lets it quit the *terra firma* of the real. The Inferno is located towards the centre of the Earth; the Purgatory on a mountain in the Antipodic Ocean; the Paradise is placed in the planets and the sun. So impossible has it been, to this greatest genius of his race, to wean the intellect a moment from experience, earth, tradition! It is this positive, pictorial character that gives its power to the Divine Comedy; and thus an impotence of the intellect becomes the talent of the poet. For if it should be thought that scenery less physical was not conceivable, let the topography of the same regions besought in Milton or in Klopstock.

The Italian historians also are, like the Roman, best in style. They remain as fully destitute of philosophy as their ancestors. The reflection of even Machiavel is but a fatherly sagacity—the result of a long and vigilant experience of the world. This distinction, which is quite national, confirms strikingly the assigned character. In fact, the race of "the exterior" must both observe and judge well. Thus, unpreoccupied with themselves, they perceive others with concentrated keenness, and they judge them by the like objective comparison of induction. Whereas the Teuton, on the contrary, distracted by the interior, judges others, and even sees them, but with reference to himself; and therefore never can correct or generalise his social knowledge. He is accordingly in penetration, again, the opposite of the Italian. It is this outward perspicacity that explains also the appearance of an exception among the Italians to the Roman nullity in philosophy. It was consistent that the race of exercise and of empiricism should produce experimentalists and anatomists, in science. But such

¹ Hardouin, in his queer "Doubts," has one sensible remark, that the Divine Comedy is: *Plutôt une histoire en ruines des siècles passés.* Even Libri, a compatriot and eulogist, describes it: *Une encyclope; unedié recueil historique et scientifique.—Histoires des Mathematiques en Italie, tom. ii., p. 165.*

are not philosophers, and the Italians have no others. In the lapse of twenty centuries of leading culture and civilization, the race has never once produced an organizer or great logician. It is, once more, that its domain has been the physical, the exterior; whereas method involves also the interior, and combines both.

In fine, the worship, which is supposed to have been totally transformed, is in reality, as before intimated, as exterior as the Roman. In the priesthood of the latter, the candidates were to be faultless, like the victims which they sacrificed, in *physical exterior*; while no attention was bestowed upon the *moral* life or qualities, as witness the election of Publius Clodius, and still worse monsters. In the priesthood of Romanism, the first conditions are retained; but what the change may be in the second, at least in Italy, were a nice question. The Italians are saved by "works," which are the sacrifices of their forefathers; while the Teutons rely on "faith," which is the spiritual contrary. But this topic, however fertile in confirmation, must be foregone, lest we be thought inclined to mix sectarian sarcasm with pure science. A final illustration may be added in the phase of morals, which in the Italians should offer nothing of the interior source called conscience.

This consequence, accordingly, is verified by a phenomenon which is too famous and decisive to require detail or admit doubt. It is notorious that the principal didactic treatise in Italian literature, we mean the Prince of Machiavelli, is a hand-book of immorality. It erects tyranny into the first of the political virtues, in due conformity with what has always been the national notion as well as practice; it further prescribes a resort to all force and all fraud, alike to the end of maintaining and of subverting it. And all this profligacy was put forth not alone without apology, but almost without argument, as if a truism with his community. And, in fact, throughout all Italy, then the centre of Christianity, there was not raised a single voice in reprobation or objection. The first remonstrances were foreign, and came from England and France. Attention once directed to this aspect of the work, the enormity appeared so monstrous to the nations of the north and west, that the author was concluded to have meant a satire or a trap for tyranny. And this conceit seems to be still the ruling notion on the subject.

Lord Macaulay has, however, seized the fact itself aright. He has recognised the simple sincerity of Machiavel, and that the wiles and irony were commentators' phantasies. But when he would himself explain the manifest unconsciousness, in both a writer of the highest class and a nation of the highest culture, to the depravity, as he describes it, of the doctrines of the work, he falls forthwith, though more ingeniously, into the usual round of com-

mon-place. This may be defined, a taking of concomitants for causes—a fallacy still the staple of political philosophy. He rests the globe upon the elephant, and the elephant upon the tortoise, and, back again, the tortoise and the elephant upon the earth. Machiavel taught vice because he and his nation deemed it virtue; and the nation so regarded it because it was unwarlike, and chose to cheat instead of fighting its barbarous oppressors; and then it made this choice because it had been debased by Popery. But whence the Popery itself came, deponent doth not say.

The same family characteristics confounded this critic in their politics; and he escapes through that well-known “veil of light” of his illustration, which so often hides the sophistry, and sometimes even the sense.

“In the political scheme of Machiavel,” says he, “the means had been more deeply considered than the end. The great principle, that societies and laws exist only for the purpose of increasing the sum of private happiness, is not recognised with sufficient clearness. The good of the body, distinct from the good of the members, and sometimes hardly compatible with the good of the members, seems to be the object which he proposes to himself. Of all political fallacies, this has had the widest and most mischievous operation.”—*Essay on Machiavel*.

Now, here the writer has again observed the facts with marked sagacity, but also tottered in exactly the same fashion in the explanation. The alleged fallacy of looking to the body, not the members—to the State, not the individuals—to the aggregate, not the elements, is no fallacy at all in a race of family; it is a philosophic truth and an intellectual necessity. Every father regards his family in this collective manner; and every object is long considered, by law or intellect, as the whole—that is to say, on the exterior, before penetrating to the parts. Accordingly, it has been no more “mischievous” than fallacious. It was the main-spring of the glory and the greatness of the Roman name. It is the celebrated *patriotism* which marked this people among all others, and which arose, as the name itself says, from viewing the nation as a family. The “great principle” of the critic is the contrary extreme of an exclusive individualism, introduced by the Teutonic race. This accordingly is, on the other side, considered mischievous and fallacious, by the race of aggregation, and with exactly the same reason. Both, in fact, are true or false, are beneficent or mischievous, according as applied, or not, to their natural places in the social march.

Macaulay was not however cited, it must be owned, for his authority, and as corroborative in proportion, by both his errors and concessions. We rather sought a useful pretext, in proceeding to sum up, whereby to bring him into court to receive judgment as an accomplice. It is known that he not only is a

fautor of Niebuhr, but that he is so with a fervour which inspired the restoration of the very ballads on which floated down the lost history of ancient Rome. It was of use, then, to suggest the proper value of his suffrage, by showing how well he can interpret the Italians who live before him. In addition, his very failure was made to bear unconscious testimony to the truth of the criterion now submitted for the whole race.

The establishment of such a test,—which seems effected by this long exposition,—had been the positive and chief element in the proposal above made, to place this great historic question upon new and scientific ground. It would be hazardous to hope that a majority of readers will yet appreciate its full force and fertility to this end. If, however, after duly mastering its spirit and various phases, they would re-peruse the treatises of Niebuhr and of Lewis,—observing well the principles and applications of the former, and controlling them by the objections or authorities of the latter,—we engage they will see farther into the subject than either author. At all events, they will, we think, dissent from the position with which the late Chancellor of the Exchequer concludes his two volumes, and which he sets off in a metaphor that may adorn the style of office, but which ill savours of the spirit or the dignity of science. “The workers,” says he, “in this historical tread-mill may continue to grind the air, but they will never produce any valuable result.”—(Vol. ii., p. 556.) It is not doubted that even the writer, were he himself to try henceforward, would, with his knowledge of the facts, produce a result really valuable.

Complementary to the establishment of this new principle of exploration, we were further to prove the test of Niebuhr to be even preposterous. But the proposition is a corollary to certain laws already demonstrated. It results from the opposition of tendency and function pointed out between the methods of induction and analysis. For these were proved to be exactly typical, as well in action as speculation, of an universal contrast between the Roman and Teutonic characters. But Niebuhr is constantly assuming these identical; inferring analogically from the one to the other, from what he knows of the Teutons to what he does not know of the Romans. Than this there could be surely no procedure more preposterous. Nor is the fact at variance with the merits we allowed him; it is rather the absurdity that has enabled him to do his work. Without the illusion of similitude the test would never be applied, and by consequence the given object could be never analysed. For Roman history, for instance, is not analysable by its own principle, as a lever cannot move a weight in the direction of its own pressure. The proper action of that principle, as now evolved, is to synthetize, to reproduce

in the mode of nature, which is the task of complete science. Niebuhr did but mistake, like most mankind, what he was doing, and thought himself reforming, when he was really but *unforming*. It is a case of the adage: Man proposes, and God disposes; or, as Bossuet expresses, "l'homme s'agite et Dieu le mene."

The contrariety between the races, their destinations and mental products, has, moreover, been exemplified repeatedly in point of fact. Our exposition of the Roman character was constantly suggesting it. An express indication was, except in leading features, withheld studiously, for fear of complicating an inquiry so large and new. The contrast proved spontaneously a key to all the errors, which we felt obliged to notice in the men of eminence concerned. We now affirm confidently, that the thesis could be proved, by mere induction, of the Teuton, as it has been of the Roman side. The task would even be much easier, as the documents are here more ample, and are dissembled by no pedagogical prepossessions of classicality. But such a survey were superfluous to the argument now closed, and which, besides, has been extended to the limits of the article. We can admit, then, but an instance, which combines a threefold efficacy: It exemplifies the contrariety between the products of the two races; it negatives, in particular, the existence of the product, on the assumption of which rests chiefly the system of Niebuhr; in fine, it illustrates the value and the mode of using the new clew.

It is familiar to the reading world, that the principal expedient by which Niebuhr attempted to expound the infancy of Roman history, was the assumption that it must have been transmitted to times of record, by means of popular songs or lays in praise of great events and actors. So much is this his main stay, that it has given his scheme, among its followers and antagonists, the name of the "ballad-theory." The existence of such songs in primitive Rome he cannot prove. He can but cite a few lapidary fragments in Saturnian verse, which he quite arbitrarily disposes into what he thinks a ballad metre; and for a second trace, some metrical lines or phrases in Livy, of which, however, we above encountered a less apocryphal account. To this he adds the testimony of Cato and Pliny, who allude to an ancient usage of chanting songs at the Roman banquets. But conceding the antiquity, which may be relative, were the songs *ballads*? Were they based upon public acts or events—were they historical? Or were they but emotional, hilarious, at most, descriptive of the physical or social qualities, as is most usual on such occasions? In the absence of specific information from those authors, the latter must be held to be the species in question. This will be immediately confirmed from a sounder source, with the addition, that the Roman songs had been still further from the heroic.

But is it possible a man of sense should ground a system upon this basis? No, assuredly; and Niebuhr did in reality present it but as what lawyers call an "inducement," if not a blind, to his hypothesis. Greek antiquity had its rhapsodies, which gave a ground-work to the national history; and mediæval Teutonism had some lays, which might do likewise. Rome, concluded Niebuhr, must therefore have had something similar, since all nations do alike, at least at equal social stages.

Now, this fundamental premiss the foregoing pages prove absurd. Men or nations, on the contrary, are never like, in either time or space; if they had been so, they could never have formed States, or left the woods.¹ A social class of which the members, a nation of which the classes, a civilization of which the nations, should be or act or think alike, would be like creatures of which the parts were all legs or heads or arms. These various groups must, as the first condition towards composing an organism, have the main organs not only different, but even contrasted in their natures. In the great European system, this opposition was found accordingly in its three operative races, Roman, Teutonic, and Celtic. Whence it follows, that, if the lay be really natural to the Teutons (to say nothing of the Greek example, which belongs to an earlier system), no like compositions can have been possibly indigenous to Rome.

The consequence is borne out by the national character assigned the Romans. The spirit called *paternal* excludes the notion of heroism. Where protection and dependence are still a portion of the inmost nature, the popular sentiment is veneration or awe, not praise or admiration. These latter feelings, which are quite opposite, can have their rise but in a state where both the duty and the dependence of protection are relaxed, where liberation from the despotism of the family has made some progress, where the fathers must court the favour which they no longer can command, and the people are transported by an unexpected championship. But this condition the Roman nation had never attained; it remained bound up to the last in the threefold *solidarity* of father and children, master and slaves, patron and clients. Accordingly, we saw the direct testimony of Cicero, who says the Romans viewed their kings (whose rank must make them perpetual types), not as "heroes" or as rulers, but as "protectors, fathers, gods." The popular poetry addressed to such must be of the nature of hymns, and of laments upon occasion of death. And both these species are accordingly well attested in Roman annals. The poetry of the paternal side would naturally be erotic, the expression of the procreative aspect of the national function. It is famous or infamous in the Fecennine

¹ We are speaking, of course, in this place, exclusive of religion.

verses. This was also, no doubt, the nature of the banquet songs referred to, as is confirmed by certain mystical allusions to the youths who sang them.

A further proof of this appears in the maturity of Roman poetry. The topic of the greater part of it is still love, when not obscenity. Ovid, Catullus, Propertius, Tibullus, and even Horace himself, are best characterized by this,—to say nothing of the satirists, who sometimes sink into bestiality. Virgil and Lucretius, then, remain the sole exceptions; and even of these it is worth remarking, that the finest passages treat of love. The same instinct of paternity inspired as duly and predominantly their descendants, the Italians, in both their infant and mature poetry. Ginguiné,¹ speaking of the former, after having been relating that the Arab and Provençal poets sung, among other things, of heroism, proceeds to say : Les premiers poets Siciliens et Italiens ne furent rien de tout cela. *Un seul sujet les occupe, c'est l'amour.* Petrarch, Boccaccio, Ariosto, and even Tasso, nay Dante himself, will answer equally for its maturity.

But as to epic or heroic ballads, there is no trace of them at either age of either nation, the Italian any more than the Roman. When there is anything of this nature in Mediæval Italy, it is translation or transfusion of the romances of France and Wales. It does not seem that this hiatus had occurred to Niebuhr as an objection to his theory of the lays of ancient Rome. The poet of the school has proved more logical or better read. Macaulay has endeavoured indirectly to remove it, by suggesting that the native products of this description were suppressed, or at least repressed, through the influx of Greek and Sicilian poetry. He may only have been imposed upon by the authority of Tiraboschi, who makes a similar apology on a different occasion (Stor. Litt. Ital., vol. iv., p. 1225, Milano). Or, more probably, the plea was prompted by an argument of the master, who has alleged a like invasion, from the same sources, in ancient Rome, in explanation of his inability to adduce something of this ballad poetry. Yet they must both have known that influxes occur but into voids. Indeed, there could be no more striking attestation of the void in question than this recurrence of the same phenomenon under circumstances so diverse—than the fact, that an Italian poet, if he would soar above the native topics, should say with Virgil : Sicelides musæ, paulo *majora* canamus.

The main hypothesis of Niebuhr is therefore false in point of fact, and would in logic be absurd, if the ballad proper were indeed Teutonic. But this is also an assumption very liable to question. The primitive poetry, like the race, should have been warlike, not historical. There is nothing of the latter cha-

¹ Hist. Lit. de l'Italie, tom. i. p. 438.

racter in even the longest of the German lays. In our Anglo-Saxon section of the family, which is best known to us, the patriotic efforts of the Bishop of Dromore have been unable to gather anything really genuine of this nature. Any versified romances were here also from Wales and France. Even minstrelsy, he owns, was introduced by the French Normans. He shows the Saxons must have had music, and presumes a poetic accompaniment. This, in fact, was the true character of both the English and German minstrelsy; the poet was second to the musician, as is suggested in his name of "Gleeman." The thing is consonant to the warrior and muscular predominance, which seeks excitement to the *emotions*, not to the *appetites*, like the paternal. Hence the specialty of lyric poetry to the Spartan section of the Greek nation, and their subserving it invariably to music and even dancing. This latter element has also, by a singular conformity, brought in the English name of "ballad," from the Italian, where it denotes dancing.

Such was doubtless, then, the poetry most congenial to our Saxon ancestors. The fact explains why Bishop Percy found all, or almost all, his "reliques," of a more or less historic caste, in the north of England, on the Border. It is that there the same race were again in contact with the Teutonic, as that which poured in from the west the wondrous tales of the Round Table. The worthy Bishop seems to feel it, and tries to parry the objection by saying, naively, that the Scotch themselves produced such poetry but on the Border. He overlooked that the Highland Scotch could neither speak nor sing his language; and, on the other hand, that in their own, they had such poetry in much higher purity.

In fact, the epic or historic lay is the specific emanation of the races we distinguish as constructive or synthetic. This accordingly is its definition, and even the import of the term *poetry*. Another testimony to its relative superiority and subsequence is the particular denomination itself of *epic*; for the pleonastic epithet of epic or *word-poetry* was in distinction from the *music-poetry*, the minstrelsy which preceded. It is the narrative (in fact or fiction) that marks the Celts in France, Spain, Britain. The minstrelsy is equally appropriate to the Teutons. If the Scandinavian section offers really an exception, it was a relic of the ancient Cimbric—that is, Celtic—residence in the Peninsula. The Scalds may well have been an imitation of the Bards.

But Niebuhr was, for all this, but a step the farther from the truth. And there is no exaggeration in concluding that such lays as have been furnished by the Celtic Macaulay for the ancient Romans, might be, with perhaps more philosophy, ascribed to the Choctaw Indians.

Art. II.—PROFESSOR OWEN'S WORKS.

1. *Lectures on the Comparative Anatomy and Physiology of the Invertebrate Animals.* By RICHARD OWEN, F.R.S., Hunterian Professor to the College. 8vo, London, 1843.
2. *Lectures on the Comparative Anatomy and Physiology of the Vertebrate Animals, Fishes.* By RICHARD OWEN, F.R.S. 8vo, London, 1846.
3. *On the Archetype and Homologies of the Vertebrate Skeleton.* By RICHARD OWEN, F.R.S. London, 1848.
4. *On the Nature of Limbs.* By RICHARD OWEN, F.R.S. London, 1849.
5. *On Parthenogenesis.* By RICHARD OWEN, F.R.S. London, 1849.
6. *Zoology; or Instructions for Collecting and Preserving Animals, in a "Manual of Scientific Enquiry, prepared for the use of H.M. Navy."* By RICHARD OWEN, F.R.S. London, 1849.
7. *Odonotography; or a Treatise on the Comparative Anatomy of the Teeth.* By RICHARD OWEN, F.R.S. London, 1840.
8. *Description of the Skeleton of an Extinct Gigantic Sloth.* By RICHARD OWEN, F.R.S. London, 1842.
9. *Memoir of the Pearly Nautilus.* By RICHARD OWEN, F.R.S. London, 1832. See also,
10. *Todd's Cyclopaedia of Anatomy and Physiology;*
 Art. *Mammalia.* Lond., 1847. Art. *Marsupialia.* 1847.
 Art. *Monotremata.* 1847. Art. *Aves.* 1836.
 Art. *Mollusca.* 1847. Art. *Cephalopoda.* 1836.
 Art. *Articulata.* 1836. Art. *Acrita.* 1836.
11. *Publications of the Palaeontographical Society,* 1849, 1851, 1853.
12. *Proceedings of the Zoological Society,* I. IV. V. etc.
13. *Reports of the British Association,* from 1838 to 1857.
14. *Proceedings of the Geological Society,* 1838 to 1857, etc.
15. *Edinburgh Philosophical Magazine.* Vols. xiv., xxv., xxxiii., xxxv., xxxviii., xxxix., xlii., xlvii., xlix., l., etc.
16. *Encyclopædia Britannica.* Art. *Mollusca.* Vol. xv., 1858.

WE have not the least intention of even attempting anything like a minute analysis of the works quoted above. An entire number of this Journal would not suffice for such a task; besides, the majority of our readers would not be very willing to follow

us into strictly anatomical discussions, for which they can have little or no liking, however interesting such may be—

“To men of science, osteologists,
And surgeons”

Who

“Spend raptures upon perfect specimens
Of indurated veins, distorted joints,
Or beautiful new cases of curved spine.”¹

Our chief desire is to present an outline-sketch of the life and labours of Professor Owen, and to indicate as we proceed the great importance of his discoveries, both to the student of natural science and to the natural theologian. It may help to set these discoveries before our readers in stronger relief, if we glance at the state of the natural sciences before Professor Owen began his work. “The human understanding,” says Bacon, “is most excited by that which strikes and enters the mind at once and suddenly, and by which the imagination is immediately filled and inflated. It then begins almost imperceptibly to conceive and suppose that every thing is similar to the few objects which have taken possession of the mind, whilst it is very slow and unfit for the transition to the remote and heterogeneous instances by which axioms are tried as by fire, unless the office be imposed upon it by severe regulations and a powerful authority.”² In this aphorism we have pointed out one main persistent hindrance to the advancement of the natural sciences. Most men in looking at natural objects, are satisfied with first impressions, and shrink from the labour implied in every attempt to correct these, by minute and painstaking investigation. It is, moreover, not very pleasant to be told that, the seeing eye is far from being an unerring guide in such matters. Some, however, are found in every age who are not satisfied with general outward resemblances, but who love to penetrate into the things which *seem* like, and to judge of them by the unvarying likeness or unlikeness of internal structure. Such men become the “powerful authorities” who ultimately impose their views on the general intelligence of the community, and thus correct impressions founded on changeful outward resemblances. The men who have, more than any others, performed this office for natural science are, Aristotle, Linnæus, Cuvier, and Richard Owen; that the number of “the mighties” is so small, may, perhaps, account for the slow progress towards a thoroughly comprehensive, philosophical, and trustworthy system of zoological classification. Aristotle was undoubtedly as far ahead of his prede-

¹ Mrs Browning.

² *Novum Organum*, lib. i. aph. xlvii.

cessors, as Cuvier was of Aristotle. But what a dreary period intervened from the time of the Stagirite to the French Baron ! The progress is both more rapid and more reliable now. It has been reserved for a very brief period in the world's history to exhibit advances to an understanding of the structure of the human frame, and of its varied functions, of which the thousands of years that preceded it shew us no similar record. So truly is this the case, that it may be safely affirmed more has been accomplished in acquiring a correct knowledge of the animal kingdom, since 1795, the year in which Cuvier gave to the world his first important contribution to natural science, than ever had been in the past ages of the world. It is no doubt true, that, prior to 1795, John Hunter had been working in new fields, and treasuring up observations of the very highest importance, and that Abernethy had characteristically struck right into the heart of Hunter's investigations and discoveries ;¹ but great as were these labours, and highly important as were their results, they are to be regarded (especially those of Hunter) mainly as rough sketches of that great field in which Cuvier became so highly distinguished, and in which Richard Owen has become even more so. It is impossible to form a just estimate of Owen's labours, without taking into account those of the great French naturalist ; for though the former stands on ground wholly his own, and which no other man has before occupied, there can be no doubt of the debt which he owes to the latter—a debt which, in the candour of true science, he is ever willing to acknowledge. It is with them, as with Turner and Claude in painting ; Turner is independently great, though it is doubtful if, without the works of Claude, he would ever have painted that marvellous bit of cloud which hangs side by side with Claude's *chef d'œuvre* in the National Gallery.

The Normandy Tutorship, into which the pecuniary difficulties of Cuvier's father forced his earnest, warm-hearted, and enthusiastic son, became one of those seemingly trifling events which have so often been found to give direction to the whole after-life of celebrated men. And nothing illustrates so fully the existence of that beneficent net-work of Providence, in the midst of which each man stands as a centre, acted upon and influenced by circumstances in themselves little worthy of notice. Thus, the cuttlefish found on the shore at Fecamp, and the terebratulidæ, cast up by workmen in 1791, from local fossiliferous strata, guided Cuvier to those two aspects of his great work, with which his name will ever be associated—the anatomy of molluscan animals, and the study of palæontology in the light of living

¹ Hunter died in 1793, the year in which Abernethy published his "Surgical and Physiological Essays."

organisms. He had, in short, found a thoroughly scientific basis for the study of zoology; and, at the same time, a key to the structure and the habits of those varied forms of old world life, whose remains the rocks have hid in their hearts for millions of years, in order that they might tell to this generation the wondrous story of the ways of the Great Creator, when no human eye looked on them. Previously to the time of Cuvier the literature of natural history (using the term in the general Baconian sense as, "The History of the Works and Arts of Nature,") was, as described by Bacon, notwithstanding the great achievements of Linnæus, only a map of "fables, antiquities, quotations, frivolous disputes, philology, ornaments, and table-talk."¹ A select company, both in Britain and on the Continent, had, no doubt, broken away from all this, and were earnestly at work breaking popular idols, and letting the light of true science in upon that huge system of superstition, which an avaricious priesthood delighted to foster and make capital of, and which Protestantism, though interested in its removal, and unwilling to countenance it, was yet too ill-instructed in the natural sciences to be able to do anything very effective in rescuing the people from it. The publication of the "*Regne Animal*" (1817) may be considered the climax of Cuvier's labours. He was then forty-six, in the height of his fame, and in the rich, ripe vigour of his mind. He died in 1832. Six years previously, Owen had entered officially into that path in which Cuvier had walked with such success; and had commenced investigations, which were soon to result in most valuable additions to our knowledge of the works of God, in opening up new sources of pleasure to the naturalist, and in showing that zoology, is not only one of the most fascinating of the sciences, but one of the most useful likewise.

Richard Owen was born at Lancaster, on the 20th July 1804. We may pass over his early years, and need do no more than refer to his studies in London, and his apprenticeship to an apothecary and practitioner in his native town. In 1824, he matriculated in Edinburgh, where, in the class-room behind the Old High School, at the foot of Infirmary Street, he attended the extra-Academical Lectures of Dr Barclay, the most accomplished teacher of comparative anatomy of his day, and the author of the well-known treatise "*On Life and Organisation*," a work which, from the fine Christian spirit which pervades it, from the breadth of view shewn by its author in dealing with the peculiarly difficult questions discussed, and from the thorough exposure which it gives of the absurdities of materialism, can not only stand the test of advanced science, but can claim a place above many recent works on the same subjects. After leaving

¹ *Instaur. Mag.*, p. i., l. ii., c. iii.

Edinburgh, Owen returned to London, and renewed his intimacy with his former friend and preceptor, Abernethy. It will be in the memory of as many of our readers as are acquainted with the "Life of Abernethy," by his admiring pupil Macilwain,¹ how much Owen was indebted to the dashing and eccentric physician, in being put in the position fitted, above all others, to give scope to his great talents.

"And here," says Macilwain, "we must pause, to record one of our numerous obligations to the perceptivity and justice of Abernethy. We have formerly observed, that at the very commencement of life, he had been accustomed to inculcate the importance of studying comparative anatomy and physiology, in order to obtain clear views of the functions of man; but all arrangements made with this view, from the time of Mr Hunter onwards, though varying in degree, still were inefficient. It was next to an impossibility to combine an availing pursuit of a science, which combines an inquiry into the structure and functions of the whole animal kingdom, with the daily exigencies of an anxious profession.

"When Mr Owen had completed his education, his thoughts were directed to a surgeoncy in the navy, as combining a professional appointment with the possibility of pursuing, with increased opportunities of observation, his favourite study. Fortunately for science, he went to Abernethy, who requested him to pause. He said, 'You know the hospital will not have any but apprentices. Macartney left on that account. Stay,' said he, 'and allow me to think the matter over.' This resulted in his proposing to the Council of the College of Surgeons (1826) that there should be a *permanent* Professor of Comparative Anatomy, and that the appointment should be given to Mr Owen.

¹ Memoirs of John Abernethy, F.R.S. By George Macilwain, F.R.C.S. 2 vols. London: Hurst and Blackett, 1853. In these volumes the contrast between John Hunter and John Abernethy, is exceedingly well put. Hunter, plodding and circumspect; ever in search of facts, and satisfied with them when found. Abernethy, capable of as much industry and earnest pains-taking application; but so soon as facts were found, hastening to set them in practical relation to other facts, as if impatient of their isolation. The former contented in seeing the ultimate usefulness of his discoveries; the latter dashing and eager to force them into immediate use. The one content with the gold in the nugget; the other never satisfied until he gave it the guinea's stamp, and made it coin current. Hunter's address ever reminded his audience of water poured from a narrow-necked vessel; Abernethy's speech flowed on smoothly and easily. "John Hunter," Abernethy used to say, "is always thinking;" but his own thoughts influenced by a lively fancy, were ever seeking expression. Hunter's most pregnant and suggestive discourses had an effect on all but the select few, like what Chatterton ascribed to Johnstone's *Irene*, when put on the stage—pit and gallery welcomed it with a nap, and "critics snored applause." Abernethy's lectures, on the contrary, were clear, sparkling, abounding in apt illustrations, and carrying interest to all. "Never were two minds so admirably suited for the heavy-armed pioneering in science; and the comparatively light-trooped intellect, which was calculated to render the first clearing easily convertible to those practical necessities with which science had to deal. Accordingly we find that Abernethy very soon extended Mr Hunter's views, and applied them so powerfully, as at least to create the dawnings of a science."

"This is among the many proofs of Mr Abernethy's perception of character. Mr Owen had dissected for lecture; and Abernethy saw, or thought he saw, a peculiar aptitude for more general and enlarged anatomical investigation. The whole world now knows how nobly the professor has justified the hopes of his talented master. It would be out of place for us to attempt a compliment to a man so distinguished in science, wherein the varied pursuits of a practical profession allow us to be mere amateurs; neither do we wish to forget other gentlemen who have distinguished themselves in this branch of science; but we believe that most competent judges allow that the celebrated Cuvier has not left any more fitted to appreciate his excellence, or who has more contributed to extend that science of which the Baron was so distinguished a leader, than Professor Owen."—Vol. ii., p. 242.

We need only read the list of works at the head of this article to see the splendid results to science of Professor Owen's thirty years' labours in the Hunterian Chair. But the energies of the Hunterian Professor were not confined to his special work. He has given the benefit of his services, and the weight of his name, to most of the recent great movements for sanitary and educational reform. In 1844-5, he was one of the Commissioners for inquiring into the sanitary state of large towns and populous districts. In 1846, he was a Commissioner (unpaid) for inquiring into the sanitary state of the metropolis; and a member of the Royal Commission (unpaid) to inquire into the live and dead meat markets of London. This Commission resulted, as is well known, in the removal of the Smithfield nuisance. At the Great Exhibition, in 1851, he was chairman of a jury; and, on the resignation of Prince Lucien Bonaparte of the chairmanship of Jury xi., "Alimentary Substances," at the Paris Exhibition Universelle, in 1855, Professor Owen was appointed in his stead. This Jury was the first to finish their work, and was, we believe, the only one whose decisions were unchallenged. On the retirement, in 1856, of Sir Henry Ellis from the Chief Librarianship of the British Museum, the Government very wisely determined to place the natural history department under a distinct head from the department of antiquities and the library. This led to the appointment of Professor Owen to the directorship of the natural history department. With this office, however, he is permitted to combine professional work, and gives an Annual Course of Lectures at the Government School of Science, Jermyn Street.

But let us return to his works, which indeed "are the chief events of a scientific man's life." Those now under review were written during the thirty years' occupancy of the Hunterian Professorship. They are many, and all of great interest and

value. In studying them, we have more than once been reminded of a quarry in one of the Scottish coal-fields, over which we have often wandered. Speaking of it recently to a workman, he said, "Yes, we have everything here." Below an alluvial deposit several feet deep, and as beautifully stratified in its beds of loam, sand, clay, and gravel as the underlying deposits, lie at least twelve feet of first-rate freestone. Then there are seams of ironstone nodules and coal, the latter about one foot thick, resting on another deposit of freestone twelve feet deep, in which unnumbered stigmæria have found a resting place. While at a little distance, and maintaining the same direction and degree of dip, there occurs a deep deposit of carboniferous limestone, rich in corals and the remains of molluscan life. There is some truth in the workman's remark. The freestone supplies material for house building; the coal yields fuel to the neighbouring hamlet; the ironstone nodules are carted to some distance and calcined; the limestone is quarried and employed for agricultural purposes; and the characteristic fossils yield abundant interest to geologists, young and old. What this quarry is to the neighbourhood, Professor Owen's works have been for years to sages and sciolists—to men long skilled in the application and in the literature of science—and to young naturalists, eager to attract a public to *their* theories for solving some of the difficult problems connected with the habits, the development, and general biological relations of past and present forms of animal life. To one class, especially, have Owen's works been a rich quarry. But for his writings, many so-called "Handbooks of Science" could not have been written, or, if written, would have been given to the public minus their most attractive pages. Without them, too, what would have been the value of many a popular lecture on subjects thoroughly and originally discussed by Owen?

The appointment to the Hunterian Professorship ushered Owen into work in which he was soon to find exercise for his highest powers, and for the application of all his acquirements in anatomy and zoology. Six years after Hunter's death, the government had purchased the large and peculiarly valuable Hunterian Physiological Collection, and, at the request of the highly accomplished Mr Clift, the conservator of the collection, Mr Owen was associated with him, with the view of furnishing complete Catalogues of the varied specimens. The results are well known and highly appreciated.¹ By the self-denying labours of Mr Clift, and the devotion to science of Professor Owen, the Hunterian Collection

¹Catalogue of Pathological Specimens, 2 vols., 1830. Of Monsters and Malformations, 1831. Of Natural History Preparations, 3 vols., 1833, 1834, 1836. Of Preparations relating to Generation and Development, 2 vols., 1840. And, before Professor Owen left the Museum of the College of Surgeons for his present office, he had finished the Catalogue of Hunter's Fossils.

is now fitted to accomplish such a work in Britain as the magnificent collection of Cuvier, in the Museums of the Jardin des Plantes, has long done in France. Both of these collections, though differing in their leading feature, are well fitted to guide in the only safe way for the study of natural science—that of observation and comparison. Messrs Clift and Owen met with difficulties, in fairly entering on their work, analogous to those which opposed themselves to Cuvier, when he, in the well known incident, “found himself surrounded by broken pieces of many hundreds of skeletons of more than twenty distinct species of animals, heaped up in a confused mass around him.” In his case, the difficulty was to separate bone from bone, to classify these, and to build up the skeletons of animals whose species had perished from the earth. But this difficulty discouraged him not. On the contrary, it tended to develope his zeal for science, and to give full scope to his great acquirements. His success made him famous. Years after, as we shall see, Owen was to accomplish something in the same department even more remarkable. But what we now refer to is, the unsatisfactory condition in which the Hunterian Preparations in Comparative Anatomy were found. The dissected animals were before them, but under forms wholly, and as it would have seemed to most men, hopelessly, unlike the originals. But if these were to be pressed into the service of science, if they were to be turned to those practical purposes in theoretical and in applied science for which they were originally designed by their illustrious collector; the species of animal needed to be determined, the relation of one preparation to another indicated, and to each the distinctive name affixed. There was only one way in which this could be satisfactorily done; and we need only mention it to suggest Owen’s extensive attainments, breadth of view, great power of minute observation, and large sagacity. It was necessary to have such a correct knowledge of the structural and functional characteristics of the living creatures, represented by the wholly altered dissected specimens, as to be able to identify them severally with these. The triumph over the difficulty reads us a lesson in industry, perseverance, and zeal in the cause of truth. And here we may notice what seems to us an outstanding feature of Owen’s works. He is peculiarly successful in the use he makes of hypothesis and of generalization. The progress of his favourite sciences, during the last ten years, bears testimony to this. Skill in making hypothesis a stepping stone to the bringing out of facts and the discovery of general laws, marks the possession of the highest type of mind. For the thousands who work on meritoriously in making observations, conducting experiments, and recording results, we will not be able to reckon

the tens who have the power to arrange these into distinct groups, or who, while drawing from them thus brought together some clearly determined meaning, can discover in them a foundation for hypotheses for the solution of difficulties still connected with them. Thus hypothesis becomes a natural starting point for further investigation, and a ground of hope for future discovery. The statement of the hypothesis forms a rallying point: all who question it seek for facts opposed to it, while all who accept it labour for its corroboration. The rivalries of science help on the progress of knowledge, and the antagonistic action of individual minds results in harmony, by the establishment of some great truth. The works under review abound in illustrations of this. Some of these we may have occasion to notice as we proceed.

In presenting to our readers a general outline of Professor Owen's contributions to science, we shall not follow them in the order of time in which they were given to the public; because, though this method has advantages, as showing the growth of his views and the various steps by which he has reached a point so high above his fellows, the advantage is more than counterbalanced by the repetitions which would be unavoidable. Nor shall we attempt to look at all the magnificent additions he has made to science. This would neither consist with the space allotted to us, nor with the popular character of our sketch. The first contribution to which we wish to direct considerable attention is that on *Parthenogenesis*—a term used to indicate the propagation of some of the simplest forms of life, and of certain insects by virgin mothers. And as the Hunterian Lectures on "The Comparative Anatomy and Physiology of the Invertebrate Animals" (1843) fitly supply a basis for the difficult and deeply interesting discussions on Parthenogenesis, we shall glance at some of them. The correct appreciation in the introductory lectures, of the proper work of anatomy in its relations to physiology, gives rich promise of the interest of the investigations; opens up the author's breadth of view, and illustrates the importance and difficulty of the discussions.

"Comparative Anatomy," he says, "fulfils only part of its services to Physiology, if studied exclusively in relation to the varieties of a given organ in different animals. The combinations of all the constituent organs in one animal must likewise be studied; and these combinations, with the principles governing them, or the correlations of organs, must be traced and compared in all their varieties throughout the animal kingdom."

This is illustrated by tracing the progressive complications of the heart, from its first appearance as the simple, dorsal vessel up to

the dicœus (two cavities) heart of the higher types of animals, and by pointing out its peculiar functions in such a form of life as the snail. Its existence in the fish is shown to fulfil one purpose, and in the snail another—

“In the snail it is so placed in reference to the breathing organ, that it receives the aërated blood from that organ and propels it to the system; it is an organ for the circulation of arterial blood, in other words, a systemic heart. The bipartite structure of the central organ of circulation, compared with lower or higher conditions of the same organ, could never have taught that fact; the knowledge of it necessitates and pre-supposes a knowledge of the relation of the heart to the lungs. In the fish the bipartite heart is so connected with the breathing organs, that it transmits exclusively to them the blood which the auricle receives from the veins of the body; it is an organ for the circulation of venous blood, in other words, a pulmonic heart.”

Thus the need of a “Knowledge of the laws of correlation of organic structures,” in order to the successful pursuit of any of the highest branches of Zoology, and thus the need, likewise, of an acquaintance with Zoology, in order to the profitable application of comparative anatomy. The necessity for the combined knowledge of these two great departments of natural history grows, as might be expected, as the range of discovery widens, and as collateral branches of science develope, because a more complex system of classification becomes necessary—a system whose leading features are found in structural peculiarities. A natural system, having for its basis certain great, patent characteristics, however well adapted for the infancy of a science or for assisting non-scientific readers, must fail to satisfy all who carry their investigations into minute questions as to organic structures and functions. It is soon found that acquaintance with these break in upon, disturb, or overturn the generalizations of a natural system. Thus Aristotle's division of animals into blood-having and bloodless was found unsatisfactory, when it was discovered that many of the latter class possessed as true blood, though differing in colour, as the so-called sanguineous species; and though this led to the Linnæan modification of red-blooded and white-blooded animals, it did not long satisfy the requirements of science. It was reserved for Cuvier to enunciate a system of classification, in which zoology and comparative anatomy were to be so linked together as to supply the foundation for a theory, in which the names employed are relatively suggestive of distinctions in structure and in functions. We may afterwards refer to the very important modifications which Professor Owen has made on the system of Cuvier. By the help of the microscope the investigations of the comparative anatomy have been carried into fields long hidden from him,

and we can now listen to his descriptions of the structure and habits of forms of life, so wondrously minute, that a single drop of water may form a world for a dwelling place of about five hundred millions of them.¹ With such groups of microscopic life the opening Lectures on the Comparative Anatomy of the Invertebrate are occupied. The covering of some of them is shown to be thin transparent skin; that of others a shell of pure colourless siliceous, as varied in its markings as the shells of well-known mollusca. The modes by which a succession of species is kept up among creatures so minute, supply some of the most interesting subjects of zoological study. Professor Owen has done much to let light in upon these, and he has pointed out striking correspondences between the development of infusoria and that of the ovum of higher animals. Referring to these analogies of structure, he says:—

“Vibratile cila—their sole organs of locomotion—are the first actively moving parts with which the mammiferous ovum is endowed, with which, therefore, we ourselves commence life. They are retained throughout life as an essential part of the organization of a very extensive tract of our internal mucous membranes.”

This hint has proved a fertile source of speculation, and has led to discussions of the most important kind.

In treating of Entozoa, or internal parasites, he groups them under two great classes—Cœlelmintha, or worms with a true abdominal cavity; and Sterelmintha, or worms destitute of this, that is, with a solid body. The investigations on Entozoa are conducted in a fine spirit:—

“In creatures,” he says, “surrounded by and having every part of their absorbent surface in contact with the absorbent and vitalized juices of higher animals, one might likewise have anticipated little complexity and less variety of organisation. Yet the workmanship of the Divine Artificer is sufficiently complicated and marvellous in these outcasts, as they may be termed, of the Animal Kingdom, to exhaust the utmost skill and patience of the anatomist in unravelling their structure, and the greatest acumen and judgment in the physiologist in determining the functions and analogies of the structures so discovered.”

The simplest and lowest forms of Entozoa are the *acephalocysts*—mere headless bags, as the name implies—consisting of a globular or oval vessel filled with fluid, and varying in size from a pea to that of a child's head. They have the power of propagating their species by discharging smaller acephalogs from the outer or inner surface of the parent cyst. These are taken possession

¹ e.g. the *Monas Crepusculus* of Ehrenberg.

of by another of the entozoa (*Echinoccus*), higher in the scale of organization, which uses them in the same way that the hermit crab (*Pagurus*) does the Univalve into which he creeps without ceremony, but with a firm instinct that in his case might makes right. We have next a review of the genus *Cystecercus*, one species of which (*Cystecercus Cellulosa*) "is occasionally developed in the human subject. It has been met with in the eye, the brain, the substance of the heart, and the voluntary muscles of the body." Then there are the different species of *Tænia*, one of which loves no *subject* but a British one, while another has a peculiar fancy for the intestines of the Slave. Will none of our ethnologists take a hint here, and astonish the world with yet another theory on a plurality of races, based on the tastes of the Cestoidean Entozoa? Some of the existing theories have foundations far less reliable than one which might be found in the facts relating to the habitats of the tape worm!

But we must leave the deeply instructive lectures on the anatomy of the Invertebrata. We have touched only on so much of them as might be held to bring us to the edge of our remarks on Parthenogenesis. The lectures are so well known that a fuller analysis of them is unnecessary. They abound in illustrations of Professor Owen's varied accomplishments, and exhibit his finely reverent spirit as he meets in his researches with abounding evidences of the wisdom, power, and goodness of the Creator. The discoveries of the old naturalists are duly estimated—light is let in upon the absurdities of materialistic views—systems of classification are corrected—species are distinguished by features which continue unvarying, and the anatomist brings into common view those testimonies to the manifold wisdom of God, which, in their very nature, lie hid from unscientific observers. Science thus becomes what she should ever be, both the true promoter of a practical and useful knowledge of the forms, living or dead, around us, and the handmaid to a trustworthy natural theology.

The phenomena to which we have referred under the name of Parthenogenesis, applied to them by Owen, and which are variously characterised by other naturalists as Alternations of Generations (*Generations wechself*), Digenesis, Geneagenesis, etc., when first made known gave rise to many wild theories in the literature of speculative science. Dreams of spontaneous and equivocal generation, and of transmutation of species, which Christian naturalists had hoped were long ago buried out of sight, and less likely, as knowledge advanced, ever to be revived, suddenly arose to claim the attention of men. Even right-hearted men of science were found willing to dissuade their more courageous brethren from what they held to be attempts

to penetrate into the mysteries as to generation which the Creator never intended to make plain to man. They forgot that, in placing man amid His manifold works, God set no other limit to his knowledge of them than that which is, and ever must be, found in the limited and imperfect faculties of the most accomplished. But while the works and their constituted interpreter remain together, the interpreter must labour to understand their meaning, to penetrate their mysteries, and to unravel their secrets. "The works of the Lord are great, sought out of all them that have pleasure therein." It seems strange that, even when we have come to enjoy the fruits of the scientific research of past generations, during which it was discouraged or regarded with suspicion by the Church, there should still be found the same suspicions of science, and the same readiness to discourage it as hostile to faith, or perilous to the Infallible Word! Now, we cannot over-estimate the advantage both to natural science and natural theology, in having at such crises men like Owen. Their firm persuasion that all the works of the God of Nature are in complete harmony with the views which he has given of Himself in His Word will lead them to weigh calmly, and in the spirit of a true philosophy, the phenomena held either to be suggestive of new forms of error or corroborative of old ones. Their broad sagacity, ever on the alert for great truths, as the result of many minute and faithfully painstaking observations, will fit them for fully appreciating the seemingly contradictory statements of students destitute of their large power of generalization. They will be able to trace the apparent antagonisms, seen only by inferior minds, to some centre of harmony, which shall seem as thoroughly consistent with the rigid demands of science as with the claims of Scriptural truth. And thus, by their commanding influence, a reliable platform is revealed from which minds but lately at variance can set out with the view of further discovery. The Lectures on Parthenogenesis, now under review, supply a notable illustration of this. We do not believe we are underrating the valuable labours of other accomplished naturalists in this field when we affirm, that we are mainly indebted to Owen for the recent rapid increase of knowledge as to the condition, habits, structure, and modes of propagation of the forms of life mainly associated with this subject. Something had been done before; but the peculiarly valuable, and profoundly interesting contributions of Van Beneden, Siebold, Kölliker, Quatrefages, Huxley, etc., have been made since 1849, when "Owen's Parthenogenesis" was published. Having made this statement, we do not intend in the following outline to confine our remarks to the volume now referred to. We wish rather to lay before our readers a rough sketch of some

of the interesting topics which have turned up in the investigations and discussions connected with the phenomena.

The distinction between mere existence and life has been more or less definitely felt by naturalists rather than clearly seen. While, however, seeking after an exact definition of the difference, or while proceeding on the belief that it is well marked and understood, they have used modes of expression in which the distinction is entirely lost sight of. If we might hazard a statement of the difference, we would say, that existence simply implies inert being, whereas life supposes the presence of an active power which, in virtue of a present force inherent and self possessed, acts in the way of growth, of sustained vital action, of change from a lower to a higher form, and of transformation. This definition may be broken up into two parts; one of which will include vegetation, and some of those beings which constitute the connecting links between animals and plants; and the other, every form of animal life. Chemical, structural, and functional peculiarities form the basis for this subdivision. The materialistic attempts to confound the two have generally been associated with one of two things—either ignorance of those sciences which supply the basis for a philosophical definition, or a class of motives whose presence must be held to vitiate their alleged scientific findings, or to cast suspicion on their assertions.¹ Again, it is much more characteristic of the age than many who charge it with mere surface work in all things are willing to admit, to fall back on first principles—to test observation, not by theory or by prevalent notions of general laws, but by repeated observation; to subject to thorough analysis alleged discoveries; and to strive after a deeper insight into the forces which regulate organic and inorganic beings. We rejoice in this, even though we see the tendency to isolate favourite pursuits, and thus to miss the correcting or modifying influences of phenomena associated with other pursuits. This prevailing characteristic will not fail to shelter the Church from the effects of the crude speculations of imaginative, would-be savants, and it will clear the onward path of science, by laying such firm and reliable foundations for research, for theory, and for wise hypothesis, as will not make it necessary to take one step back for every two made in advance, in order to remove the rubbish which gathers in the way. We meet with this present tendency to fall back on first principles, and to seek information on the beginning of things in all the natural sciences. In Botany we see it in the increasingly great attention which is being bestowed on vegetable physiology; in geology it has led

¹ For some admirable remarks on this subject, see Huxley's Article in the *British and Foreign Medical Review*, October 1853.

to innumerable discussions on what in truth geology has nothing to do with, the creation of the world; and in chemistry we have not a few revivals of speculations which look very like those old theories of final causes, which Bacon characterised as barren and profitless. But in no department of natural science is this tendency so broadly marked as in that which deals with the doctrine of generation. The questions, what is life? what is vital force? what is growth? and is growth and generation one and the same?¹ are being put with an earnestness which, if it find not a satisfactory answer on the trustworthy basis of observation and induction, will not fail to find one in the imagination of the observer. The anatomist sees a new field opening up to him, wider than any into which his predecessors had gone, and also more intensely interesting from the very difficulty in conducting his researches on the lowest forms of organic being, and from the novel and, in many cases, startling transformations through which many of them pass—transformations in order to development, in which each modification of constitution and of structure supplies new material on which to try his skill, and hints ever freshly recurring of more wondrous things than those in the midst of which he stands, by inclination not less a worshipper of the Creator than a man of science.² To the physiologist also, the field is not less interesting and attractive. He can follow the various forms, from the cell mass up to the perfect animal, and observe the modifications of action occurring in connection with modifications in structure, and with the apparent halts which take place in the march of some well-marked object—halts during which, what he may have recently regarded as the perfect growth of one creature, passes into another form on which he had looked as a member of a distinct species, and which, as such,

¹ "Wolf long ago taught that the bud was identical with the seed; but no one, I believe, has carried this doctrine to its legitimate conclusion, namely, that generation is only a form of growth."—*Sea-Side Studies*. By G. H. Lewes. Blackwood and Sons. The work now referred to is another testimony to the varied accomplishments of the author of the "Biographical History of Philosophy." It is full of interest, abounding in graphic sketches, and full of sea-side life pictures. In every way, outside and inside, it is a most attractive book. Scientifically, we have more than once missed a link in the chain of observation, and have been constrained to jot down opposite several statements *not proven*. We, at the same time, dissent from Mr Lewes's theory as to the identity of growth and generation. While to non-scientific readers the expression will be suggestive of error, to men of science it will seem only fitted to hide the acknowledged difficulty, without bringing them any nearer a true solution.

² "Imagine a lily producing a butterfly, and the butterfly in turn producing a lily, and you would scarcely invent a greater marvel than this production of medusæ (from a Campanularian Polype) has to its first discoverers. Nay, the marvel must go further still; the lily must first produce a whole bed of lilies like its own fair self, before giving birth to the butterfly, and this butterfly must separate itself into a crowd of butterflies before giving birth to the lilies."—Lewes, *ut supra*.

had found a distinct place in the nomenclature of science. The observations of Professor Owen, among the forms of life now referred to, have been varied, valuable, and full of interest. The student of natural theology will find much worthy of notice if he will penetrate, with Owen as a guide, into a department of scientific investigation, which may be truly said to reveal evidences of the wisdom and power of the Creator, not surpassed, if equalled, by anything he will meet with among the highest forms of animal life. The researches to which we now allude assume two aspects, one of which we would limit to questions touching the constitution and analogies of the primary germ cell animal or vegetable, that is embryology, properly so called; the other we would associate with the development of the embryo, by the differentiation of that which was originally a homogeneous mass. In the latter case, we would not look for explanations of the causes of this differentiation, but would simply ask the naturalist to watch its action, in order that we may have a trustworthy record of its stages, and be thus enabled to classify these, so that different forms of life may be kept distinct, and offspring linked up with their true parents. The results of this would be interesting to all. The man of science would be thankful for getting rid of much prevailing confusion, and the general reader would rejoice in the discovery, on the one hand, of the thoughts of God as the great Creator and Preserver of all things, by the marvellous wisdom exhibited in the existing modes for the propagation of species; and, on the other hand, by the increasing revelation of the general harmony of plan which obtains among a class of organic beings which, until very lately, were not known to exist, and which are even yet but imperfectly understood. This is the true work of the naturalist, as the interpreter of nature. And how fruitful of the riches of knowledge it comes to be to all; while to the Christian philosopher it is suggestive of those treasures which, as the fruits of his study, he may year after year lay on the altar of love as his testimony to the manifold wisdom of God. The prevailing harmony which led God to call all things good would also appear unto man. For unto God the many-stringed lyre of creation is in perfect tune, and unto Him it has, ever since the sons of God rejoiced at the birth of time, sent forth sweetest melody. "All thy works praise Thee O God." But creation has not seemed thus to man. A few of the leading strings of the mighty lyre have appeared to sound grandly, when touched by the hands of those whose hearts are right with God, and whose faces, like the face of the sweet singer of Israel, pictured on some of our old Bibles, are turned towards the serene, deep blue over-head, as if to them the place of eternal calm was surely beyond. But it has not been thus

with all. One string and another has been believed to be out of tune. This is shown not to be so, and the lyre will increasingly send forth its full rolling harmony, in proportion as our knowledge of the works of God increases, and as the students of science grow, not in knowledge only, but in faith and love also. The work goes on. Wise men are hastening from the east and the west, from the north and from the south, to lay their gifts of gold, of frankincense, and of myrrh at the feet of Him who was born in Bethlehem, because by "Him also the worlds were made."

Without entering into the deeply instructive discussions on "The Cell Theory," which meet us in all recent treatises on Animal and Vegetable Physiology, we would refer our readers to the able article of Mr Huxley, already mentioned, which contains the clearest exposition of the subject we have met with. Meanwhile, the profitable result of these discussions may be stated thus:—"Vital phenomena are not necessarily preceded by organisation," but organisation is the effect of life already imparted—already present. If we ask what is that force which is potential to development, to increase, to growth properly so called, we are led to the very edge of creation; the existence of cause is suggested, and we are made to feel that, though as to the true nature of that, there is but a hair's breadth between us and perfect knowledge—full revelation of the great mystery into which the mightiest intellects of earth have earnestly desired to penetrate; yet we cannot, it is not in the nature of things that we ever should, pass over this narrow threshold and stand on the same platform with the Fountain of Life, where the light shineth, and where there are no shadows, no mysteries, for He knoweth all things. In science then, as in grace, the distinct recognition of the personality of God, as the primal source of being, is thrust on us at that point at which mind cannot penetrate further, even while it feels that there is much to be known beyond; a point, then, at which those of noblest faculties are constrained to acknowledge their littleness, weakness, and ignorance. "The ablest, endeavours," says Owen, finely, "to penetrate to the beginning of things do but carry us, when most successful, a few steps nearer that beginning, and then leave us on the verge of a boundless ocean of the unknown truth, dividing the secondary or subordinate phenomena in the chain of causation from the First Great Cause."¹

The Lectures on Parthenogenesis deal mainly with Owen's views of generation, reproduction, and development of certain lower forms of life. He shows that, in the animal kingdom, reproduction implies the existence of a nucleated cell, called the

¹ Parthenogenesis, p. 8.

germinal vesicle or seed receptacle; and another such cell, called the sperm cell, the product of which is the "spermatozoon" or life-containing seed. These, when brought together, form the primary step in animal life. This product, the germ mass, undergoes certain metamorphoses. It may, for example, die, and in its death "minister to the life of a being higher than itself." But Owen propounds a theory of very great moment as to some of the phenomena belonging to the matters now referred to. He alleges that all the germ mass may not be required for the formation of the characteristic animal body. "Certain of the derivative germ cells may remain unchanged, and become included in that body which has been composed of their metamorphosed and diversely combined or confluent brethren." These again may, in certain circumstances and under certain conditions, result in the realisation of the same animal, as in the case of *Aphis*, without passing again through the simple process implied in the formation of that body into which they had passed.

"Cells predominate in the tissue of the vegetable kingdom, the lower members of which consist exclusively of them, and have been thence called '*plantæ cellulares*;' the lowest of all consist of a single nucleated cell. The animal kingdom starts from the same elementary beginning." The lowest form here traced is the *Gregarina*, a parasite which infects the internal cavities of insects and worms. Then, rising higher, we have certain, so-called polygastric infusoria, in which secondary cells are seen forming special organs, as for digestion, etc. In some of these a process is observed in which the divisions of the germ cell seem to force each other to positions equi-distant, and these in time separating, form distinct individuals. This is reproduction by spontaneous fission. In the *hydra* or fresh-water polype, "the progeny of the primary impregnated germ cell, retained unaltered in the body, may set up the same actions as those to which they owed their own origin." Thus, the nucleated cells which are formed around the adhering foot of *hydra fusca*, push out buds in which a centre of assimilation is formed, communicating for a season with the stomach of the parent. This communication is afterwards closed, and the result is a perfect polype. This is propagation by gemmination, and differs from development *ab ovo*, because in this case the impregnated germ cell is included in the body of the parent and not in a chorion or egg covering. "The *hydra* so developed may propagate again by *gemma*, and these two kinds of generation may alternate indefinitely." Some of these simple forms of life pass through several changes, at each of which a distinct individual appears. "Thus we have a trematode entozoon (one of the class characterised by their suctorial pores), successively assuming the form of a *Gregarina*,

a Cercaria, and a Distoma." We have Medusæ producing *Hydra Tuba*, this again a Strobila, which in its turn produces a Medusa. So with Echinus. Prof. Müller "found in the sea, at Heligoland, a transparent acalephoid animalcule, which he called *Pluteus paradoxicus*." This changed into the ophiura or brittle starfish, while another kind of Pluteus passed into an Echinus. These are some of the mysterious revolutions of the wheels of life, which Owen has long watched with so much advantage. The same phenomena are met with among certain insects. It finds a striking illustration among the *Aphides* or plant-lice. The eggs are deposited in the leaf axils, and in spring wingless six-footed larvæ are developed from them. These again will produce a succession of broods without any connection with the males. If the virgin progeny be kept apart, the parthenogenesis, or true virgin birth, will go on even to the eleventh generation. A provision is thus made for their multiplication to an extent scarcely credible. In Lecture XVIII. of the Comparative Anatomy of the Invertebrata, Owen has made the following calculation of the rate of increase:—

"The *Aphis lanigera* produces each year ten viviparous broods, and one which is oviparous, and each generation averages 100 individuals.

1st generation,	1 aphid produces
2d	" 100.
3d	" 10,000.
4th	" 1,000,000.
5th	" 100,000,000.
6th	" 10,000,000,000.
7th	" 1,000,000,000,000.
8th	" 100,000,000,000,000.
9th	" 10,000,000,000,000,000.
10th	" 1,000,000,000,000,000,000.

If the oviparous generation be added to this, you will have a thirty times greater result," p. 235. As might have been anticipated, many theories have been advanced with the view of accounting for the now undoubted virgin-birth discovered among the animals to which we have referred. The theory of Owen, which has been severely tested, and which continues as the only satisfactory one, has already been mentioned. His explanation is, that "the primary or parent germ cell has equally divided its spermatogenic virtue among its countless progeny." Again, he says, "the condition which renders this seemingly strange and mysterious generation of an embryo without precedent coitus, possible, is the retention of a portion of the germ mass unchanged."

The Lectures on Parthenogenesis gave a strong impetus to the investigations now under review, and soon suggested collateral researches of great importance. We can now follow the

different stages of development through which some of these creatures pass, and mark with certainty the influence which modifications of form have both on their habits and habitats. The propagation of Gregarina forms one of the most curious and wonderful episodes of animal life. Its structure is of the simplest kind, consisting of a single cell filled with granular matter. In shape it is elongated oval, and its only mode of motion in its strange dwelling-place—the intestinal canal of the earth worm—is by a process of contraction and expansion of its substance. When Gregarina is going to throw off a progeny, two animals meet, change their shape from elongated oval to hemispheric, and then coalesce in one sphere. From this mass, thus perfectly united or rather amalgamated, a numerous family is thrown off in minute particles. These are held to be embryo Gregarinæ. The next point in the development is not so clearly made out, because the creature must migrate into another dwelling. But the form in which it is supposed we next meet with it is one which, in its turn, passes through several stages, until it reaches its highest as Cercaria, a tiny, active, unresting creature, with triangular-looking head, well marked internal vesicles, and tail. It next loses its tail, enters the pupa state, finds its way into the body of the snail, and is met with there as Distoma—the full grown Trematode entozoon.

The migration of many of the entozoa forms a subject of much interest. It has been fully illustrated in connection with the development of cestoid worms. In the liver of the rat and mouse a small creature is found (*Cysticercus fasciolaris*), which must pass into the body of another animal before it can attain to perfect growth, and has been clearly traced by Dr Nelson, Siebold, and others, as the tape worm of the cat (*Tænia crassicolis*). The death of the one animal is thus necessary, in order that another living within it may pass into a higher form of life. Again, cestoids inhabiting snails, etc., on which different birds feed, are found as fully developed Tænia in the elementary canals of the vertebrata which thus prey upon them. As this question of migration comes to be more understood, we will meet increasingly with mysteries of being in quarters which, until lately, were not regarded at all. And as the work of discovery proceeds, new material for admiration and praise will be brought out before all who take pleasure in seeking out the works of God, following the footprints of His wisdom, and tracing the evidence of His goodness and His love.¹

But it is more than time that we should indicate what consti-

¹ We refer our readers, who wish a fuller view of modes of generation, etc., to the very valuable article on "The Ovid," by Dr Allen Thomson, in Todd's *Cyclopædia of Anatomy and Physiology*, Sept. 1852.

tutes the main element in Professor Owen's greatness. We mean his researches and discoveries in comparative anatomy. These form his chief claim to the admiration and gratitude of the civilised world. In many instances, indeed, these have not passed into the minds of the public, as associated with his name. They have been received by men of talent, and by them expounded and set in popular aspects. One great hindrance to their direct reception from Owen himself, is found in the purely scientific nomenclature in which they are for the most part expressed. For though his works on comparative anatomy abound in passages of great beauty, in grand thoughts, in picturesque descriptions, in great generalisations, and in rich revelations of most instructive and suggestive evidences of design, yet the frequency with which words, uncouth to all but scholarly readers, are used, often unnecessarily, unfit his writings for even distantly competing with the more popular expositions of far inferior men. A highly intelligent man said to us lately, "I have often set about trying to study Owen's works, but have as often been forced to give up the endeavour by his appalling terminology." There is much truth in this. It does try one's Greek and Latin not a little to catch at once the distinctive thoughts contained in many of the compound words to be met with in all his writings. And yet we cannot but acknowledge the rare merit which he justly claims, in connection with his labours, in simplifying and, at the same time, giving determination to the language of comparative anatomy. In many cases in which preceding anatomists have used a variable nomenclature in describing the skeleton, and have given different names to the same bone, Owen has avoided the confusion and hesitancy to which this naturally gave rise, by rejecting both, in some instances, and associating the bone with a word more exactly descriptive than either; and, in other instances, by compounding the two in such a way as to suggest, by the complex term, both of the thoughts indicated in the two names. The value of this is very great. Students of mental science know how readily error associates itself with vague terms, and how quickly these lead to endless doubts and discussions. This is not less the case in minute descriptions of the complicated animal skeleton; and, especially, in discussions on "homology," with which Owen's name is so intimately connected. Not only might a broadly misapplied term lead to error, but a term also in which there is even one subordinate phase of thought suggested which is not appropriate to the bone described, would land the student in the same result. When Mr Owen first endeavoured to give scientific expression to his views on the Homologies of the Vertebrate Skeleton, he was well aware that his attempts to give determination to the existing variable nomenclature, and to intro-

duce terms more distinctive and exact than those in use, the charges of rashness, presumption, and pedantry would be made against him. He might have foreseen, too, that several of the most formidable objections to some of his views would arise out of that devotion to old terms which ever interferes with a just appreciation of the precise ideas intended to be suggested by new ones. He has, accordingly, put on record his own apology for the so-called innovations. This we give in a note.¹ But it must not

¹ "The degree," he says, "and extent of the diversity of my determinations from those of other anatomists, are shown in the succeeding columns, headed by their names; and I proceed now to give the reasons which have compelled me, in such instances, to dissent from the high authority of Cuvier, Geoffroy, Meckel, Hallmann, and Agassiz. These reasons will exonerate me, I trust, from the reproach of underrating their justly-esteemed opinions, which have been abandoned only where nature seemed clearly to refuse her sanction to them. The instances of such dissent are much fewer than they appear to be at first sight. In most cases, where the names differ, the determinations are the same. For 'basilaire,' which Cuvier exclusively applies to the 'pars basilaris' of the occiput, and which Geoffroy as exclusively applies (in birds) to the 'pars basilaris' of the sphenoid, I have substituted the term 'basioccipital'—a term which, as it is more descriptive of the bone in question, will perhaps be more acceptable to those who prefer a determinate to a variable nomenclature, since Cuvier himself has almost as frequently applied to that bone the term 'occipital inférieur' as the term 'basilaire. For the descriptive phrase, 'occipital latéral,' the term exoccipital, proposed by Geoffroy, is preferable; especially since the paroccipital is the most 'lateral' of the elements of the occipital bone, in the definite sense in which the term 'lateral' is used in the precise and excellent anatomical nomenclature of Dr Barclay." In the same way he vindicates the use of "supra-occipital," as preferable to "occipital supérieur" of Cuvier, the "inter-pariétal" of Cuvier, Agassiz, and Geoffroy; the "Squama occipitalis" of Hallmann, and the "Hinterhautschuppe" of Meckel and Wagner. His defence of his other innovations is equally successful. "And if," he adds, "the purists who are distressed by such harmless hybrids as 'mineralogy,' 'terminology,' and 'mammology,' should protest against the combination of the Greek prefix to the Latin noun, I can only plead that servility to a particular source of the fluctuating sounds of vocal language is a matter of taste; and that it seems no unreasonable privilege to use such elements as the servants of thought; and, in the interests of science, to combine them, even though they come from different countries, where the required duty is best and most expeditiously performed by such association."—*Homologies of the Vertebrate Skeleton*, pp. 9-18. If it be an objection to the nomenclature of French anatomists, that they deal more in descriptive phrases than in single expressive terms, it is no less so to that of German, that, while their language is even more susceptible of happy combination than Greek is, yet the results are such as unfit it for ever becoming the current language of anatomical science. This remark will at once commend itself to the eye of our readers, if they will glance down the following columns, in which the names given to several parts of the endo-skeleton by Owen are contrasted with those used by Meckel and Wagner:—

OWEN.
Basi-occipital.
Supra-occipital.
Pre-opercular.
Sub-opercular.
Supra-orbital.
Supra-temporal.

MECKEL and WAGNER.
Hinterhauptbeinkörper.
Hinterhautschuppe.
Vorkiemendeckelstück.
Unterkiemendeckelstück.
Oberaugenhöhlenbein.
Augenbogenschuppe.

"Such terms," Owen remarks, "are likely to be restricted to the anatomists of the country where the vocal powers have been trained from infancy to their utterance."

be forgotten how great the boon is which Owen has conferred upon science by his improvements in its terminology. A language of comparative anatomy, which the highest authorities in Europe and America agree in accepting, must greatly facilitate interchanges of thought, and, in the long run, help forward discovery.

Reference has already been made to the ability of Cuvier in determining the relation of bones of different animals, most of which had belonged to extinct species, when set before him in a confused heap. He brought bone to bone, and built up with unerring precision the entire skeletons of many different species. Something in this direction had no doubt been done by preceding anatomists, but it required that breadth of knowledge, varied scientific attainment, great industry, and withal, fine philosophic spirit, which met in the greatest of French naturalists, to carry the labours of others to successful results. It was also reserved for him to discover to all how powerful this instrument might become, not only in the comparative anatomy of man and of the lower animals, but also, in making geology what it had not hitherto been, namely, a field in which might be worked out information even as to the climatal condition of past epochs of the world's history—information which was to become the foundation for some of the grandest generalisations which can occupy the mind of man. Professor Owen was put in circumstances by which, in this department, he is seen standing side by side, and on the same lofty platform, with Cuvier. Bones and fragments of bones of extinct vertebrata, destitute, however, of the parts which the illustrious Frenchman regarded as a necessary basis for reconstruction, were submitted to him, but he was not at fault. He had recourse to other elements, lying further out of sight and more difficult of application, but possessing the advantage of being likely to be met with in every fragment of bone. With these as bases, he felt he could not only reconstruct the entire animal by getting the key to it in a small fragment, but that he might form a reliable estimate of its habits, of the climate under which it existed, and of the general condition of the localities frequented by it. These elements he found in the impressions which the nerves and blood-vessels leave on the bones traversed by them. The employment of his own and of Cuvier's tests have led to those wonderful results with which all students of natural science are familiar. His memoirs on the bones of extinct mammalia, and on those of the Struthious birds of New Zealand, are also well known. The incidents connected with the determination of the bones of the *Dinornis*, though often told, will bear repetition. We give them in the words of the biographer of Abernethy:—

“A seafaring man brought a piece of bone, about three or four
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inches in length,¹ as he said, from New Zealand; and offered it for sale at one or two museums, and, amongst others, at the College of Surgeons. We shall not here detain the reader by telling all that happened. These things are often brought with intent to deceive, and with false allegations. Most of those to whom the bone was submitted, dismissed it as worthless, or manifested their incredulity; amongst other guesses, some insinuated that they had seen bones very like it at the London Tavern, regarding it, in fact, as part of an old marrow-bone, to which it bore, on a superficial view, some resemblance. At length it was brought to Professor Owen, who having looked at it carefully, thought it right to investigate it more narrowly; and, after much consideration, he ventured to pronounce his opinion. This opinion, from almost anybody else, would have been perhaps only laughed at; for, in the first place, he said that the bone (big enough, as we have seen, to suggest that it had belonged to an ox) had belonged to a bird; but, before people had had time to recover from their surprise or other sensation created by this announcement, they were greeted by another assertion yet more startling—namely, that it had been a bird without wings.

“Now, we happen to know a good deal of this story, and that the incredulity and doubt with which the opinion was received was too great for a time even for the authority of Professor Owen entirely to dispel. But mark the truthfulness of a real science; contemplate the exquisite beauty and accuracy of relation in nature! By-and-by, a whole skeleton was brought over to this country, when the opinion of the Professor was converted into an established fact.”

In a short time several distinct species were determined from bones sent from New Zealand—as *dinornis*, *palapterix*, *notornis*, etc.

We cannot do more in this article than generally indicate the manifold contributions which Owen has made to Palæontology. They meet us in every geological text-book. The outline sketches of *Megatherium*, *Labyrinthodon*, *Myiodon*, *Palæotherium*, *Anoplotherium*, *Thylacotherium*, *Phascolotherium*, etc., which adorn their pages, may remind us how much he has done in this department. The accurate science and the high mental endowments brought to bear on the determination of the remains of extinct animals, are well illustrated in one of his most recent contributions to Palæontology—“On the Affinities of the *Stereognathus Ooliticus*,” a Mammal from the Oolitic Slate of Stonesfield.² In the following extract we have a good example of Owen's power. The portion quoted is preceded by an exact scientific description and comparison of the portion of jaw submitted to him—a piece about nine inches in length, containing three molar teeth—but this description would not be intelligible without the figures which accompany it.

¹ Six inches long and $5\frac{1}{2}$ in circumference at its smallest part.

² Quarterly Journal of the Geological Society of London, Feb. 1857.

"The interest," he says, "which the above-described fossil from Stonesfield oolitic slate excites is not exclusively due to its antiquity, its uniqueness, or its peculiarity: much arises out of its relations as a test, in the present state of Palæontology, of the actual value of a single tooth in the determination of the rest of the organization of an animal, or of so much of it as serves for a recognition of the place of the extinct species in the zoological series: the attempt, at least, to analyse the mental processes by which one aims at the restoration of an unknown mammal from a fragment of jaw with a tooth cannot be wholly useless.

"That the fragment in question is the jaw of a mammal is inferred from the implantation of the tooth by two or more roots. Most mammals are known to have certain teeth so implanted. Such complex mode of implantation in bone has not been observed in any other class of animals. The rule is deduced from the number of observations, positive and negative. Why two or more roots of a tooth should be peculiar to viviparous quadrupeds, giving suck, is not precisely known. That a tooth, whether it be designed for grinding hard or cutting soft substances, should do both the more effectually in the ratio of its firmer and more extended implantation, is intelligible. That a more perfect performance of a preliminary act of digestion should be a necessary correlation, or be in harmony, with a more complete conversion of the food into chyle and blood,—and that such more efficient type of the whole digestive machinery should be correlated, and necessarily so, with the hot blood, quick-beating heart and quick-breathing lungs, with the higher instincts, and more vigorous and varied acts, of a mammal, as contrasted with a cold-blooded reptile or fish,—is also conceivable. To the extent to which such and the like reasoning may be true, or in the direction of the secret cause of the constant relations of many-rooted teeth discovered by observation,—to that extent will such relations ascend from the empirical to the rational category of laws. So much, briefly, at present, for the grounds of reference of the *Stereognathus* to the mammalian class.

"The broad sex-cuspid crowns of the molar teeth of the *Stereognathus* might crush vegetable matter or insect cases: a recognition of their adaptability to uses observable in the nearest resembling teeth of existing animals leaves the above wide field of choice or guess, as to the nature of the food of the oolitic animal. Let us take the latter hypothesis, and endeavour to work out more of the *Stereognathus* on the basis of its multicuspid and assumed insectivorous tooth. Insects fill the air, creep on the ground, burrow in the earth, move on and in the waters. In the living world of animals we have insectivorous molars associated with a frame and limbs modified for flying, running, burrowing, and diving. The principle of the mechanism for crushing insects being the same, it is secondarily modified in each genus of insectivora; and so modified, though without affecting the crushing power of the tooth, that the odontologist discriminates at a glance the grinders of the bat, the hedgehog, the shrew, or the mole.

"At present we can only refer such secondary modifications, as we do those of the more complex grinding teeth of the herbivora, to that principle of *variety in non-essentials* which makes the leaf in each kind of tree unlike, and, as it is affirmed, which makes no two leaves, in any single tree, exactly alike.

"If the tooth of the *Stereognathus* were like those of any known recent or fossil insectivore, we should infer that the rest of its organization was like such insectivore, and so classify it according to the degree of similitude. But as we know of no sufficient ground for the association of any given particular modification of the multicuspid tooth with such aerial, terrestrial, or aquatic modification, as the case might be, of the rest of the frame, our conclusion would be an empirical one; and, having regard to the narrowness of its support from observation, would not be such as to leave the mind free from a sense of the possibility of its being liable to be proved to be an erroneous conclusion. On the hypothesis of the *Stereognathus* being an insectivore, there is no known group or form of marsupial or placental insectivora to which it can be referred.

"The course of observation has shown that the teeth of the smaller kinds of hoofed herbivora, such as the peccari, the hyrax, and the chevrotains, approach in their cuspidate character in the smaller amount of the cement, and in the simpler disposition of the enamel, to the form and structure of the teeth in the insectivora. A nearer approach is made by some still smaller species of extinct hoofed quadrupeds, to which reference has been made in the body of this paper. The sCAPE, disposition, and number of the cusps in the molars of the *Stereognathus* have appeared to me to be more like those in *Microtherium*, *Hyracotherium*, etc., than in any known, recent or extinct insectivore. Just in the ratio of this resemblance, therefore, is the inclination to view the *Stereognathus* as a hoofed rather than a clawed mammel; as having been herbivorous rather than insectivorous, and as having been most probably a mixed feeder."

The monograph on the *Stereognathus* contains also the clearest statements we have met with on the province and application of physiology in the determination of fossil remains, and on the connection between Cuvier's views of the law of correlatation of animal forms and physiology. Reference is thus made to the views of one of Cuvier's contemporaries:—

"Geoffroy St Hilaire denied the existence of a design in the construction of any part of an organised body: he protested against the deduction of a purpose from the contemplation of such structures as the valves of the veins or the converging lens of the eye.

"Beyond the coexistence of such a form of flood-gate with such a course of the fluid, or of such a course of light with such a converging medium, Geoffroy affirmed that thought, at least his mode of thinking, could not sanely, or ought not, to go. Now this objection has, at least, the merit of being intelligible: we know on what ground the adversary stands and what he would be at.

"From this frank assertion of the tenets of the Democritic and Lucretian schools, those concerned in the right conception and successful modes of studying organised structures by the young have little to fear. But the insinuation and masked advocacy of the doctrine subversive of a recognition of the Higher Mind,—the oft-recurring side-blows at teleology,—call for constant watchfulness and prompt exposure.

"It is not, however, my business here to go over the arguments which have been adduced by teleologists and anti-teleologists from Democritus and Plato down to Cabanis and Whewell."

Not less instructive to the general reader are many other of Professor Owen's contributions to scientific periodicals. The magnificent monograph "*On the Fossil Reptila of the London Clay*," contributed in 1849 to the *Papers of the Palæontographical Society*, contains the following as the concluding words of the description of the crocodilia:—

"Had any of the human kind existed and traversed the land where now the base of Britain rises from the ocean, he might have witnessed the Gavial (*Gavialis Dironi*—Owen) cleaving the waters of its native river with the velocity of an arrow, and ever and anon rearing its long and slender snout above the waves, and making the banks re-echo with the loud, sharp snappings of its formidably-armed jaws. He might have watched the deadly struggle between the crocodile and the palæothere, and have been himself warned by the hoarse and deep bellowings of the alligator, from the dangerous vicinity of its retreat. Our fossil evidences supply us with ample materials for this most strange picture of the animal life of ancient Britain; and what adds to the singularity and interest of the restored 'tableau vivant,' is the fact, that it could not now be presented in any part of the world. The same forms of crocodilian reptile, it is true, still exist: but the habitats of the gavial and the alligator are wide asunder, thousands of miles of land and ocean intervening: one is peculiar to the tropical rivers of continental Asia; the other is restricted to the warmer latitudes of North and South America; both forms are excluded from Africa, in the rivers of which continent true crocodiles alone are found. Not one representative of the crocodilian order naturally exists in any part of Europe; yet every form of the order once flourished in close proximity to each other in a territory which now forms part of England."

Many of Owen's most able papers are to be met with in *Todd's Cyclopædia*. The scope of two of these may be indicated—the one on the *Monotremata*, the other on the *Marsupialia*.¹ In the article on "*Monotrematous Animals*," he extends the views of Sir Everard Home, and corrects those of Geoffrey St Hilaire in regard to the *Ornithorhynchus paradoxus*, and assigns to it its true place among the mammalia. By a singularly interesting

¹ Vol. iii., 1847.

application of comparative anatomy to individual *Echidna* (*Hysterix* and *Setosa*), and to *ornithorhyncus*, he conclusively sets at rest the long-continued discussions, touching the exact position of these animals, indicates their partial alliance to marsupialia, and gives prominence to certain broadly-defined characteristics which reserve them for a place distinct, as a sub-class, from the true-pouched animals. There are few better illustrations than in the article on "Marsupialia," of the combination in its author of great patience of research, the faculty of nice discrimination, varied scientific accomplishments, and a thoroughly-trained power of induction, in order to correct and large generalizations. So early as 1839, Owen proposed, at a meeting of the Zoological Society, a system of classification for Marsupialia, based mainly on dental characteristics.¹ The proposed dental formulæ are applied, in the paper now noticed, to representative members of the five tribes² of pouched animals, and the truthfulness of the dental formulæ is fully corroborated, by a succeeding full anatomical examination of certain marsupials.

Owen seems to rejoice when dealing with types of life which possess structural peculiarities of an intermediate kind—peculiarities which, at one time, appear to suggest the propriety of associating them with a class of animals higher in the scale than they, and, at another, as clearly to suggest that their true place will be found among a lower type of life. Such creatures afford scope for the application of varied scientific attainments, and call into lively exercise all his powers. This is seen in the mode in which he deals with the monotremes; and it finds a full illustration in his papers on the remarkable *Lepidosiren annectens*,³ of the Amazon and the Gambia. He graphically describes the points at which it bears a very strong resemblance to the reptile, but which fail to fix it in the same tribe from the ichthyic characteristics which are found to prevail. In the same way he deals with those points at which it exhibits a hankering after a place among the higher cartilaginous fishes; while he shows that they fail in fixing its place as among them, because of the prevalence of resemblances to the true osseous types.

But we must leave this mode of remark, and indicate yet higher aspects in Owen's works. A comprehensive view of the discoveries associated with his name, would not fail to impress us with their singular importance to the student of natural theology. In making this statement we do not affirm, either that their theological relations were before him in his work, or

¹ Tran. Zool. Soc. H., p. 315; Proc. Zool. Soc. vii., p. 5; Ann. Nat. Hist. iv., p. 118.

² *Sarcophaga*—*Entomophaga*—*Carpophaga*—*Poephaga*—and *Rhezophaga*.

³ Proc. Linn. Soc. 1839. Miscr. Soc. Lond. Feb. 1840.

that in the heart of his scientific investigations he is ever conscious of the thoughts of God as revealed in these. This may or may not have been always the case. Sometimes it was, as we have seen, in expressions already quoted. All we imply in the statement is, that a thoughtful mind, exercised under the love of a consciously present personal God, will be sure to see the importance of Owen's works to natural theology. His labours in Palæontology afford abundant material for illustrating the controlling presence of the Divine mind in the successive realisations of those grand epochs which had all passed away before man,—the noblest of the works of God,—appeared among the works of the present epoch. No one can intelligently follow Owen's descriptions of forms of animal life, from the mollusc of the Silurian up to the megatherium of the Pleistocene, without becoming conscious that they bear testimony to the gradual evolving of a plan at every point of which Order is richly suggested. If, again, we leave this broad general ground, and follow him as he deals with any one creature, and understand so as to appreciate the comparison or contrast, either of its own different parts or of these parts with their affinities in other creatures, and the dependence of such animals on the climatal condition of the world at the time, we will often be startled by the direct, positive testimony to those unities of plan in which the natural theologian finds some of his most sure foundations. This, however, assumes even greater interest when the thought which lies farther out of sight is revealed, namely, that which assigns more prominence still to the presence of God by the exhibition of law—of rule—according to which He has worked from the beginning. We shall refer more fully to this. Nor has he, knowingly or not, rendered less service to the hitherto favourite theme of natural theology,—the adaptations of means to ends,—the correspondence between instruments and work,—between structures and functions. We need only refer for illustrations of this to his works on "The Nature of Limbs;" on "Odontography;" and on "The Skeleton of an Extinct Gigantic Sloth" (*Mylodon robustus*, Ow.)

No one will withhold his admiration from a man who can pass under review hundreds of specimens of living or extinct species, and, as if by intuition, though really by an ability the fruit of severest labour and discipline, single out parts of correspondence or difference, arrange into groups, main and subordinate, and assign to each a name which passes into the nomenclature of science without opposition, because it has an obvious foundation in structural peculiarities. This rare talent is often seen in Owen's writings. Sometimes it is met with in shrewd hypotheses of the ultimate direction which half finished processes of scientific

induction are likely to take. At other times it is seen in the way in which he follows general laws of development to points at which the general aspects are lost sight of—are merged in the individual and special; much in the same way as in households, the features of a child are seen bearing at different stages of growth, a resemblance to each of the old family portraits on the wall, until these, at a certain period, cease to be generally the features of the family, and become permanent in a countenance unlike them all. This same power has enabled him, in his work on "Homology," to give expression to the ideal archetype after which all the vertebrata seem to have been formed.¹

The "Homologies of the Vertebrate Skeltons,"² is the last of Professor Owen's works to which we mean to refer. And in doing so, we beg to repeat, that we have not attempted a full analysis of his numerous writings. We have not even mentioned many of the most important of them. We hope, however, that we have already given such samples of the fruit as will tempt others to seek it where it hangs, in rich ripe clusters.

"Relations of homology," says Owen, "are of three kinds: the first is that above defined, viz., the correspondency of a part or organ, determined by its relative position and connections, with a part or organ in a different animal; the determination of which homology indicates that such animals are constructed on a common type; when, for example, the correspondency of the basilar process of the human occipital bone with the distinct bone called 'basi-occipital' in a fish or crocodile is shown, the *special homology* of that process is determined.

"A higher relation of homology is that in which a part or series of parts stands to the fundamental or general type, and its enunciation involves and implies a knowledge of the type on which a natural group of animals, the vertebrate for example, is constructed. Thus,

¹ We need scarcely refer to the interest of the theory of the archetypal idea in connection with God's modes of self-manifestation in the Bible. For example, the tabernacle was made after a pattern in the heavens, shown to Moses in the Mount, and the main thoughts which cluster around the tabernacle find a lodging among the spiritual tracery, and the sacramental pillars of the New Testament Church.

* "ANALOGUE."—A part or organ in one animal which has the same function as another part or organ in a different animal.

"HOMOLOGOUS."—The same organ in different animals under every variety of form and function."

The little "Draco volans" offers a good illustration of both relations. Its fore limbs being composed of essentially the same parts as the wings of a bird, are homologous with them; but the parachute being composed of different parts, yet performing the same function as the wings of a bird, is analogous to them. Homologous parts are always, indeed, analogous parts in one sense, inasmuch as, being repetitions of the same parts of the body, they bear in that respect the same relation to different animals. But homologous parts may be, and often are, also analogues of each other, inasmuch as they have the same relation of subserviency to swimming. So, likewise, the pectoral fin of the flying-fish is analogous to the wing of the bird; but, unlike the wing of the dragon, it is also homologous with it."—P. 7.

when the basilar process of the human occipital bone is determined to be the 'centrum' or 'body of the last cranial vertebra,' its *general homology* is enunciated. If it be admitted that the general type of the vertebrate endo-skeleton is rightly represented by the idea of a series of essentially similar segments succeeding each other longitudinally from one end of the body to the other, such segments being for the most part composed of pieces similar in number and arrangement, and though sometimes extremely modified for special functions, yet never so as to wholly mask their typical character, then any given part of one segment may be repeated in the rest of the series, just as one bone may be reproduced in the skeletons of different species, and this kind of repetition or representative relation in the segments of the same skeleton I call 'serial homology.' As, however, the parts can be namesakes only in a general sense, as centra, neurapophyses, ribs, etc.; and since they must be distinguished by different special names according to their particular modifications in the same skeleton, as *e. g.* mandible, coracoid, pubis, etc., I call such serially related or repeated parts 'homotypes.' The basi-occipital is the homotype of the basi-spheroid; or, in other words, when the basi-occipital is said to repeat in its vertebra or natural segment of the skeleton the basi-spheroid or body of the parietal vertebra, or the bodies of the atlas and succeeding vertebrae, its *serial homology* is indicated."—(P. 7.)

General homology thus deals with the relation of a part, or of a series of parts, to a recognised fundamental type. Special homology treats of the structural (anatomical) relation of parts in different animals, whether or no such parts perform the same functions. Thus the broad distinction between analogy and homology—the former having reference to functions, the latter to structures. The wing of the insect is analogous to the wing of the bird, because both are used for flight, but they are not homologous, because anatomical affinity cannot be predicated of both. Whereas the wing of the bird is homologous to the forelimb of the mammal, because they correspond in their anatomical relations. Again, serial homology deals with the relation of corresponding parts in the same skeleton. The benefit which has resulted to zoology as a science, from these distinctions, has been very great. The confusion which has so often arisen from want of precision in the use of such words as analogy and affinity, has been avoided, and the student has had set before him a nomenclature fully fitted to help him in his profoundest researches. These remarks may prepare the way for a popular *résumé* of the views on this subject. The discussions raised when it was first brought out touching the now general accepted vertebral theory of the skull, tended to give much prominence to it. Indeed, on the truth or falsehood of this the whole system so elaborately expounded by Owen must stand or fall. In 1806, the gifted, but materialistic and intellectually eccentric Lorenz Oken, when wandering among

the Hartz Mountains, came upon the skull of a deer, washed white by the weather, and having its pieces partially dislocated. One of those stray thoughts which wait only on genius, and often lead to great results, flashed in the soul of Oken, and under its power he cried—"It is a vertebral column." Led by this he soon found means for verifying it. In every investigation his first impressions were confirmed. But not satisfied with the discovery that the bones of the head are true vertebræ, he pushed the theory to extremes which made it ludicrous, by alleging that the extremitities are repeated in the head. Thus the noted description of the "cephalic members," in his work on the "Elements of Physiophilosophy."¹ "Both pairs of limbs," said the highly imaginative Zurich Professor, "are repeated in the head, because in it the whole trunk is repeated; the upper jaw corresponds to the arms, the lower jaw to the feet." "The digits are repeated in the teeth, the teeth are claws!"—(P. 408.) Cuvier dissented from the general theory of Oken, as to the cranial vertebræ; but, with various modifications, it was virtually accepted by the greatest of modern anatomists, as Dumeril, De Blainville, Carus, Meckel, Geoffroy St Hilaire, etc. The objections of Cuvier are elaborately reviewed by Owen, and their want of force pointed out. He also subjects Oken's theory to a severe and strict scrutiny, and accepts it as true to nature, to the extent that there are four true vertebræ in the skull, namely, the nasal, the frontal, the parietal, and the occipital.² From this point, he carries forward his investigations to the discussion of the homologies of all the parts of the skeleton, and exhibits the general truthfulness of Oken's first views, by a most masterly and minute comparison of the bones of a fish, a reptile, a bird, a quadruped, and of man. These discussions are deep and intricate; but, as we follow Owen through them, we feel how truly the presence of the thought of an ideal archetype is to him the true Ariadne thread by which he is guided in the midst of what, without this thought, must have been but a tangled maze. As the result of the comparison, a foundation has been laid for a grander and vaster generalisation. Anatomists, generally, had admitted the presence of bones in the skeletons of the lower animals having well-marked affinities with bones in that of man. Does there then exist some common type, according to which the skeletons of *all* the vertebrate animals have been formed?³ And if so, what is the distinguishing feature of

¹ *Lehrbuch der Natur-philosophie*. Translated for the Ray Society.

² "Homologies, etc.," p. 132.

³ Recent researches in embryology have shed light on this from another quarter. It is found that the embryos of existing species bear, at certain stages of their growth, resemblances to types which have now perished from the earth. Thus the embryos of existing osseous fishes exhibit phases of development which are found to have been persistent among the fishes of the Old Red Sandstone.

the common type, and what is the general rule or law according to which it is subordinated?

"Comparison," says Owen, "of the piscine skeleton with those of the higher animals, demonstrates that the natural arrangement of the parts of the endoskeleton is in a series of segments, succeeding each other in the axis of the body. These segments are not, indeed, composed of the same number of bones in any class, or throughout any individual animal. But certain parts of each segment do maintain such constancy in their existence, relation, position, and offices, as to enforce the conviction that they are homologous parts, both in the constituent series of the same individual skeleton, and throughout the series of vertebrate animals."—(P. 81.)

But more, must there not have been somewhere a great archetype, according to which the lowest of the vertebrata, equally with the highest, have been formed? Yes; it is illustrated in fish, reptile, bird, beast of the field, and in man. The plan of the house has been fully formed in the mind of the architect, before it is either realised in the actual building, or even expressed in rough outline on his board. Every step in the realisation is taken after the ideal exemplar, first formed in his own mind. There are strong inferential reasons in Scripture for supposing that it was thus in the Divine Mind as to the creation of man. As world was piled on world, and as the mighty ages glided past in their grand march up to Eden, the ideal exemplar obtained expression which increased in frequency as the time approached for the bringing in of the human race. "The recognition," remarks Owen, "of an ideal exemplar proves, that the knowledge of man must have existed before man appeared. For the Divine mind which planned the archetype, also foreknew all its modifications. The archetypal idea was manifested in the flesh, under divers modifications, upon this planet long prior to the existence of those animal species that actually exemplify it."

In conclusion, were we tempted to give, after the manner of many of our old authors, diagrammatic expression to our estimate of Owen's works, we would arrange their titles in the form of a pyramid, and hang a scroll over them all, bearing this legend:—
**THE TESTIMONY OF COMPARATIVE ANATOMY AND ZOOLOGY
TO THE MANIFOLD WISDOM OF GOD.**

ART. III.—*Remarks on Secular and Domestic Architecture, Present and Future.* By GEORGE GILBERT SCOTT, A.R.A.
London: John Murray. 1857.

IN the book before us, Mr Scott, with an abundant show of originality, does, in reality, nothing more nor less than the very useful work of summing up the chief results of the last quarter of a century of architectural criticism. To persons well read in this department of literature, the way in which Mr Scott appropriates other men's thoughts, not only without a word of acknowledgment, but with all the airs of original genius, must be somewhat laughable. We confess that, to us, it is even irritating; for we may venture to take credit for having contributed not a few ideas to that mass of new truth which Mr Scott puts forth with such apparent confidence in his sole proprietorship. Compared, however, with Mr Ruskin, we have small cause to complain. Mr Scott has not only often adopted, without acknowledgment, Mr Ruskin's ideas, but also, as far as he was able, Mr Ruskin's style, even to its defects. We may say, indeed, that, for a mere epitomist like Mr Scott in the work before us, the greatest beauties of Mr Ruskin's style must become defects; for the style of a man enunciating for the first time important principles in art is naturally enthusiastic, and very excusably dogmatic. But who would not smile if he were to find a sober professional gentleman, in 1858, writing in some such manner as this?—"Rash as my readers may think me, and aware as I am that I lay myself open to the sneers of the sciolist, and the mockery of the matter-of-fact, I nevertheless fearlessly declare my conviction, formed after weighing the question well, that any two sides of a triangle will be invariably found to be greater than the third." But we fancy that there are others who have even more cause than Mr Ruskin to complain of Mr Scott's enthusiastic self-appropriation of architectural truth. We mean those who have written their new truth in brick and stone; men, like Mr Woodward and Mr Butterfield, who, without any flourish of trumpets, have raised works of enduring and novel beauty, such as the new Church in Margaret Street, London, and the new Debating Room of the Union at Oxford.

We would have it to be understood, that we object only to the manner of Mr Scott's book. The matter, inasmuch as it is a practical and popular digest of architectural principles, established, by various original thinkers and workers, during the last twenty years, is very useful indeed. This volume will much

extend a true taste in architecture among the people, who, as a rule, never believe anything until they have been told it at least twice; and we willingly contribute all we can to its usefulness and popularity, by recommending it as a readable, and even entertaining summary, in a department of knowledge which ought to be interesting to everybody.

Other people besides Mr G. G. Scott "have for many years been strongly impressed with the following facts":—

"First, that the vernacular domestic architecture of our day is wholly unworthy of our state of civilisation, and requires a thorough reformation. Secondly, that the attempts which have been made to effect this, whether by those who favour the Italian, Mediæval, or other styles, though often most praiseworthy, have been in the main unsuccessful. Thirdly, that the success, however incomplete, of the great movement by which pointed architecture has been revived for ecclesiastical purposes, though unquestionably the one great fact of our day, so far as architecture is concerned, has not hitherto had full scope for producing a corresponding effect upon our secular buildings. Fourthly, that this has been caused chiefly by two circumstances: the impression which, strange as it may be, is so prevalent, that Gothic architecture is essentially an ecclesiastical style, and that though eminently suited to churches, it is not fitted for other classes of buildings, and the consequent unnatural severance which has taken place within the last few years between ecclesiastical and secular architecture—a severance which has never existed at any former period; and, on the other hand, the want of a due appreciation of the question by many of the architects themselves, who have been engaged in this revival, which has led, in many cases, to an uncertainty and hesitation in their efforts when engaged in secular works. Fifthly, that a thoroughly erroneous impression prevails as to the principles on which the revival of pointed architecture is founded and carried on; that it is an antiquarian movement, and seeks to revive all that is ancient, instead of being, as is really the case, pre-eminently free, comprehensive, and practical; ready to adapt itself to every change in the habits of society, to embrace every new material or system of construction, and to adopt implicitly and naturally, and with hearty good-will, any invention or improvement, whether artistic, constructional, or directed to the increase of comfort and convenience."

Mr Scott arranges his work according to the order of the above "facts" or themes. He begins by making a forcible appeal to this effect:—"Are we, as Englishmen, satisfied with the state of domestic architecture amongst us, or ought we to be so? Our homes, of course, are comfortable and pleasant inside, but are they beautiful outside? Can we justly take a national pride in them, and point to them as indications of a high state of civilisation? Do they contrast satisfactorily with the houses of our

forefathers, built in periods we are accustomed to think rude? Do our town houses add grandeur and picturesque effect to the streets of our cities? Do our country houses harmonise well with the scenery around them, and add beauty to the landscape? Then, again, how do we feel satisfied with the look of our country towns? How do we like the look of the cottages of our poor?" This series of questions is certainly embarrassing to our *amour propre*. Our forefathers, visibly, were wiser in some things than we are. They could not build a barn without making it beautiful and noble; whereas we cannot, even in our palaces, rise above the mean and repulsive. There is far more than "the melancholy graces of decay" in the charm of all architectural work of the twelfth, thirteenth, fourteenth, and fifteenth centuries. Age does not make a bad building beautiful, although it beautifies a good one. There is a real instinct of beauty, and, what is of even more importance, a manifestation of willingness to sacrifice lower considerations to the production of beauty, in all old work, which puts a most vital difference between it and ours. We do not, however, believe that this difference arises from any general degradation of feeling. We are surprised that a practical man like Mr Scott should not have set more importance than he does on some of the conditions under which most modern builders have to work. Some years ago we pointed out the fatal condition of *impermanence* which has long been imposed upon the domestic architecture of towns. We believe that the necessity under which builders in general have lain of building edifices of which the chief economic virtue is, that they shall not last beyond the term of the ground-lease—a term scarcely long enough, in general, for the mere seasoning of a well-built house—has been more ruinous to the national instinct for beauty in architecture than all other causes put together. In the arts which have escaped degradation from such external causes, it is not found that we have, upon the whole, degenerated. Music, which is more nearly allied to architecture than any other art, has advanced with astonishing rapidity from a state of artistic infancy to one of maturity, since the dying out of the best age of building. Poetry and painting have attained their highest triumphs during this period of architectural degradation. We must look, then, to some change of external conditions to explain a degeneracy which is clearly not that of our humanity; and where shall we find a better explanation than in the fact that, for reasons which need not here be investigated, people all over the civilised world have ceased to attach that idea of *permanence*, throughout successive generations, to their domiciles, which was at the foundation of the architecture of the best ages. No building, domestic or public, secular or sacred, can be archi-

tectural in its effect, unless it looks as if it were built to last for ever. This semblance of absolute permanence is not only a condition of the expression of architectural ideas, but it is itself the one great idea of which all kinds of architectures are the varied expressions. The Egyptian style, as this *Review* may claim the credit of having first proved, was the simplest of all possible expressions of this idea. The expression was produced by sheer mass assuming the form which nature's own architecture, in her mountains, takes. Everything in Egyptian architecture intensified, by multiplication and contrast, that form of passive and eternal resistance to gravitation and all ordinary destructive forces, the pyramid. Greek architecture diminished the brute mass, and abolished the passive force of the prevailing form of the edifices of Egypt, and substituted a far more beautiful and vital expression of the idea of permanence. Its masses, though still noble, were no longer rocks, lying heavily upon the earth, and carved into avenues of shafts and cliff-like towers. They became vital by being divided into two classes, which were opposed to each other with the most varied, powerful, and delicate expression of equilibrium. From the basement of the Greek temple sprang a series of shafts, of which the outline, multiplied by fluting, impressed the eye with a sense of a torrent of power rushing up to meet the gravitating mass of the entablature. The mass, and its supporting power, were each expressed with elaborate artistic science, and the different ways in which this was done gave rise to the different "orders." The Doric shaft had its expression intensified, first, by the three horizontal channels, which were cut in its thickness just below the capital, and which, by diminishing the supporting power *wantonly*, where it was most required, made a proud and most intelligible boast of superabundant ability for the task imposed; secondly, by allowing itself, after this display of ample power, to seem to suffer to a certain degree from the superimposed mass, under which it spread into the beautiful "quirked ovolo," that was crowned by the "abacus," or tile,—the point of rest and indifference between the opposing powers of support and gravitation. The Ionic shaft spoke the same thing in different words. Instead of channels diminishing its power, it was ornamented where it was weakest; and its power, on meeting the weight of the entablature, distributed itself into two streams, which rolled over in elastic curves. These, and other expressional powers in the shafts, were met by a similar declaration of opposing force in the entablature, of which we have no space here to describe the various interest, all combining in this one idea. Lombard architecture, again, relied for its architectural character upon a totally different mode of showing forth the same quality of

power and permanence. Here the *wall* performed the offices of the *colonnade*, and endless devices were resorted to, whereby its thickness and might were artistically manifested. Finally, the architects of the pointed style, having discovered the mechanical principles upon which the greatest amount of permanence and security could be obtained with the smallest expenditure of material—a discovery which rendered all previous styles for ever obsolete—exhausted their powers of invention in elaborating that wonderful system of decoration which compensates, by the most brilliant vitality, for the absence of massiveness. The supporting members, in this style, having so little work to do that the display of it would not be imposing, are made to appear as if that task were altogether abolished, and the lines of the clustered shaft are continued in the arch, and lose themselves in the roof-ridge; and a thousand details of decoration, in base, capital, moulding, etc., help this effect. Thus we see that, in the four great architectures of the world, the main idea has always reference to mass, that is, to permanence,—in the first three positively and directly, in the last indirectly, *i.e.*, by the management of masses of moderate magnitude so as to avoid the impression of slightness and impermanence. We may fairly conclude, then, that whatever tends to destroy the connection, in men's minds, of absolute permanence with good building, tends also to destroy the habit of mind which is the ground of architectural feeling. Now it is certain that the world, for several generations, has been living in houses which neither are nor seem to be built for more than a very moderate "term." We live all our lives between walls so thin and high, that, but for the strong probability afforded by experience that they *will* last on from day to day, we would not venture to trust our lives to them for an hour. Accustomed as we thus are to behold, without disgust, the immense majority of our edifices raised, as it were, out of the pale of architectural principles, it is not surprising that our architectural instincts are so blunted and perverted, that, when we are called upon to build under conditions of permanence, we have no feeling for the work, and can only plagiarise, and spoil in the plagiarising, the works of our ancestors. Stupendous efforts have been made, during the last quarter of a century, to revive the lost art of architecture, and the success of those efforts has been much greater than any sober-minded man would have ventured to prophesy at the beginning of that time. Ecclesiastical architecture is wholly revolutionised. This movement, Mr Scott truly says, "is not a mere fashion, it is no popular caprice; it is a deep-seated, earnest, and energetic revolution in the human mind, and one which is not peculiar to our own country or our own church, but which, in a greater or less de-

gree, pervades all the countries where Gothic architecture once flourished. It is a craving after the resumption of our national architecture, the only genuine exponent of the civilisation of the modern as distinguished from the ancient world. No town or village in England but supplies its testimony, in church or school-house, to the magnitude of this revolution. There remains, however, a great work before us,—our civil architecture is as yet unrevolutionised. We cannot, however, say that we are, in civil and domestic architecture, in precisely the same position in which we were, as concerns church architecture, fifteen years ago, for we have been all this time laying in stores of knowledge on the subject. We have put out our feelers. We have made many feeble and irresolute essays, not to mention many miserable failures. We have made our reconnaissances; but the real brunt of the attack is still to come. Let us gird on our harness for this new contest. It may seem at first sight hopeless; but let us look at what we have already achieved, and our courage need not fail us." We fear that Mr Scott is too sanguine of what may be done, and that he overrates, not the magnitude, but the vitality of what has already been effected. The "revolution," of which he speaks, began, as "revolutions" generally do, at the wrong end. Architecture, like charity, should have begun at home, if possible—which, unhappily, it was not; for social economies are stubborn things, and turn deaf ears to æsthetical persuasions. Landlords and building*acts laugh at theories of beauty. It is in vain to talk and write about the possibilities of metropolitan architecture while the Duke of Bedford and the Marquis of Westminster stand aloof, like the Fates, and decree that the life of half the houses in London shall be ninety-nine years, and no more; it is in vain that we extol the picturesque gabled fronts of the dwellings of our ancestors, so long as the law declares that the party-walls of every house shall rise well above the adjacent roofs, thus providing that the *sides* and not the *centres* of our dwellings shall have the greatest altitude. We are sorry to damp the sanguine views of Mr Scott and the Gothic revivalists; but we fear it is certain that, so long as we live in houses built under such conditions, it is impossible that, as a nation, we should look upon architecture, even in its public and permanent works, in other than a dilettante and disbelieving spirit. A dilettante reformation, however, when it assumes the magnitude of the recent change in the principles of church building, is better than no reformation at all; and it is not quite impossible that such reformations may at last subdue the obstinate enemies of its vitality, and finally end where, as we said, it ought, if possible, to have commenced. One step has certainly been taken, which need not be retraced.

We have come at last really to understand the principles on which the mediæval architects built, and, if we can do no more, we can reproduce their conceptions without ridiculous blunders. This is more than we were able to do even so short a time ago as the date of the commencement of the New Houses of Parliament, which no architect of the present day would think of designing upon their actual plan; and not only do we understand those principles so as to carry them out in stone, but we also comprehend that their artistic and economic truth is such that no previous mode of architecture can pretend to rival the mediæval style, which, as we have said, has therefore rendered all ancient styles, and modern corruptions of ancient styles, for ever obsolete. Admirers of the Gothic styles can no longer be silenced by their opponents with a contemptuous *de gustibus non est disputandum!* Every person, with the architectural information of the present day, has the same right to laugh, not at the *bad taste*, but the *ignorance*, of a club of gentlemen, or an artistic commission, who resolve to choose the Greek or Palladian mode for their house or picture-gallery, that a school-boy would have to ridicule, in an otherwise well-informed man, the refusal to acknowledge the conclusiveness of the argument of the binomial theorem. In fact, when Mr Scott says, "Now I boldly assert that no style of architecture has so directly derived its characteristics from utility as that which I am advocating; that no style is capable of adding so much that is beautiful and pleasurable, not only without reducing, but as arising out of its uses, as this; and that no style is equally capable of adapting itself to varied requirements, or of enlisting in its service the inventions, materials, and ideas which are introduced by the advance of social improvement;" he "boldly asserts" a series of positions which have become mere truisms of architectural criticism.

Not only have other architectural critics—ourselves among the number—had a long start of Mr Scott's "bold assertions," but even architects have now for a good while been anticipating them in stone and brick. It is not the first time that the world has heard of Gothic architecture being as good for secular as for sacred purposes. The most conservative nation in the world has raised its legislative palace in this style; and in Deane and Woodward's New Museum at Oxford we have a still bolder adoption of it, in the very home and heart of conservatism of all kinds. In the latter building, to which little public attention has been called, and of which Mr Scott makes no more than a passing mention, Gothic architecture does far more than assert its secular efficacy, it takes a new stride as an art, and actually puts into practice various, new, and important ideas which appear as "bold assertions" in Mr Scott's

book. In this edifice, and in the Debating Room of the Union, Oxford, certain decided but apparently incompatible superiorities of the Italian mediæval mode are vitally grafted upon our own national style; moreover iron and glass are being boldly, though it would be premature to say, successfully adopted, for purposes to which the mediæval architects never dreamed of applying them, namely, for the material of shaft, spandrel, buttress, and roof. In the metropolis, also, there has been no lack of boldness in applying Gothic architecture to secular purposes. Here and there, in the otherwise hideous streets of London, the passenger comes upon a new private house or shop, which, if it had been found in Venice, with the due adjuncts of decay, would have filled our architectural critics with enthusiasm. There is one such house in Park Lane, another in Southampton Street, Strand, a third in Buckingham Street, and a fourth in Little Russell Street, Covent Garden. We are afraid that we cannot reckon Mr Scott's new buildings in Dean's Yard, Westminster, as belonging to the best specimens of the revival of Gothic architecture for secular purposes which is now in process of initiation. Between the above extremes of Palaces and Museums on the one hand, and small houses in insignificant streets on the other, London can show several other examples of this commencing revival. The most successful of these is, to our thinking, the new edifice on the east side of Lincoln's Inn Fields. Here we have a very beautiful revival, not only of Gothic, but of English Gothic, or "Tudor." The new Record Office, in Fetter Lane, is a less imitative, but also less successful, adaptation of Gothic forms to modern and secular purposes. These examples are at all events enough to save Mr Scott from being charged with a wild and eccentric spirit of innovation, in such "bold assertions" as we have quoted above.

Let it be remarked, that the smallest of the buildings, which we have now instanced as examples of modern secular Gothic, is good for at least five hundred years; and that nothing can more conclusively demonstrate the truth of our assertion of the necessity of the appearance of indefinite permanence in an architectural work, than the disgustingly unarchitectural effect of houses, such as many on Tulso Hill, and in other suburbs of London, in which Gothic and Lombard forms are made use of in houses built on the warranted-to-fall-down-in-ninety-nine years principle. These houses, which are of honest materials, not mere compo, which used a short time ago to be the material of all ninety-nine year architecture, are, in fact, worse perversions of architectural truth than the simple plaster deceptions, just as a self-deceiving sophist is worse than a direct and ingenuous liar. The latter outrages truth, but does not discredit it in the minds of others; but the

former injures in the minds of the weak, who are the great majority, the instinct of reality. The proper style of architecture for the ninety-nine year house, is that which was universal under the ninety-nine year system until the architectural mania (which began about forty years ago, and is now at its height) reached the London trades' people, who, when they do go mad,—and that is always when they hearken while the "demon whispers, 'have a taste,'"—go mad to a degree unknown among less business-like people. We allude to the style in which the great mass of London is built. This style is perfectly honest, and, as far as it goes, artistical. It is a true symbolical representation of the central idea. Just as "for ever" seems written on the face of every building of antiquity, so, upon the faces of the five hundred miles of flat, undecorated, baked-mud streets of London, is written, "for ninety-nine years." It was a bad thing when London streets first took to lying, and the thin walls of bilious-looking bricks hid themselves in plaster coverings of Greek and Palladian pretensions. But this falseness is quite shallow and excusable, when compared with that in which real materials assume forms whereof the main significance is an idea of duration totally at variance with the actual fact.

We fancy that there are already symptoms of a revulsion in architectural matters; so much of the vilest profanation of architectural truth and beauty meets us at every turn, that our taste for the truth and beauty themselves is in danger of being converted into indifference, if not disgust. We confess ourselves then, on the whole, unhopeful of a revival which seems to have so little heart in it. We fear that it will not have the strength to bring about those modifications of social habits and laws which are absolutely necessary to its extensive prevalence. In ecclesiastical architecture, by reason, not, as Mr Scott supposes, of its sacred nature, but of the permanent character of all ecclesiastical edifices, a total revolution has indeed been effected. But the revolution is only in the architecture—not in what is of far more importance, the national feeling. After a deal of writing, and talking, and money-spending, we have got our fine new toy, indeed; but who cares much about it? Had it been possible to have begun our reform at the right point, and to have so built the houses we live in that the mere living in them should have educated our tastes, and endowed us with an unconscious perception and love of architectonic reality, we might then have built Churches, Palaces, and Houses of Parliament in which the heart of the nation would have delighted. As it is, it seems quite clear that the nation does not care a straw for what it talks, and writes, and spends so much money upon. We should like to know what per-centage of Londoners, or visitors to London, have

ever gone a hundred yards out of their way to see a series of the noblest architectural views in the world,—views which they have paid millions of money in taxes to create,—we mean the views of the different parts of the Houses of Parliament, which are to be obtained only in the never-visited interior courts of that wonderful edifice.

We will, however, for the time being, hope against hope, and so proceed with our review of Mr Scott's summary of the chief considerations by which we should be guided in prosecuting the Gothic revival in "secular and domestic architecture."

The window is justly made the first of the claims of Gothic architecture to adoption for domestic purposes. "Gothic architecture," says Mr Scott, "as might be expected from its northern origin, is *par excellence* a *window* style; so much so, that by its windows we most readily distinguish it from other styles, and by them we define its different historical changes. In the pure Greek the window comes in only as a thing to be ashamed of, and the means of lighting the finest Greek temples are still a mystery. In Roman buildings it assumes a more definite position, but still seems rather admitted as a necessary intruder than a legitimate part of the architecture. It is in the middle ages that the window first takes its proper position as one of the most essential architectural features, and as the most important vehicle for architectural decoration." In this passage, Mr Scott does not state the case in its full force. The fact is that, whereas in Greek architecture and all its derivative branches, and in Lombard architecture, the wall is an artistic necessity of the first order,—in the Greek, as a passive foil to the expression of ascendant energy in the shafts,—and in the Lombard, as being itself the main object of attention and decoration, it exists, in the Pointed style, only on sufferance, and as an occasional, but only occasional necessity. In those buildings in which this style approaches nearest to its ideal perfection, such as the Cathedrals of Cologne and Strasburg, the wall is almost wholly dissolved into windows. The capacity of pointed architecture for the admission of light, as compared with that of the rival style of the Italian Renaissance, may be sufficiently understood by our readers, if they will recall the secular Gothic edifices at present in the metropolis, and particularly Christ's Hospital and the New Record Office. It will be remembered that, in these buildings, almost the entire space between buttress and buttress is *window*. The nearer a Gothic building comes to being wholly made up of buttress and traceried window the better, the more Gothic it looks. But turn to the best metropolitan edifices in the rival style; look at the range of classic club-houses in Pall Mall. Why does the Reform Club strike us as being so much more beautiful and in

character with its style than the rest? Chiefly, because less of the wall is sacrificed to windows than in any other of these buildings. The absurdity of building museums, picture-galleries, and other places of exhibition, in the Greek style, or in any of its derivatives, seems, in the face of this clear and undeniable principle, to be too glaring to require enforcement.

Mr Scott's discussion of the question as to whether a Gothic window is bound to be pointed, seems to us to be the most satisfactory part of his book, and that part in which he has most shown independent thought. There are two architectural parties; one of which is for trusting entirely to constructional convenience as the source of architectural character, the other maintains that there are certain typical forms which must be adhered to, for the form's sake, or we fail in the production of homogeneous beauty. "There are two normal modes of covering an opening, the one by a horizontal lintel or architrave, the other by an arch." (Mr Scott might more properly have said that there are three; for the pointed arch differs, in constructive qualities, almost as much from the round-headed arch as this does from the lintel.) "Now one set of theorists insists on having only lintels, or only round arches, or only pointed arches, while another is for using them all according to convenience." We heartily agree in Mr Scott's decision as thus expressed:—

"The last is the theory dictated by common sense, the first by pedantry; yet we must so far temper the latitude given by the one as to prevent its introducing positive discord. It is quite true that the forms which satisfy the obvious demands of construction are, so far as this is evident, satisfactory to the instinct of common sense, and may even pass for beauties, but they have no *necessary* connection with beauty, or harmony of form, though, by a happy coincidence, they often suggest what is agreeable to the eye. The common-sense theory then, must be tempered, when found needful, by the principle of harmony and good taste: thus, in a lintel style, the arch should be an exception, used only from obvious necessity; and in an arch style, the lintel should be sparingly used, and in positions in which an arch would obviously be needless. Again, in a building in which the round arch predominates, other forms should only come in as the result of practical considerations; and in a building where the pointed arch is the leading type, the round or other forms of arch may be admitted freely, but never without a practical reason. I claim, then, for Gothic architecture the liberty to use the arch or lintel as circumstances may dictate, but reserving fully a preference, *ceteris paribus*, for the arch; and, in the same manner, I claim for it the free choice of the different forms of arch, as may be best suited for each particular position, but urge, at the same time, a general preference for the pointed arch."

The next question discussed by Mr Scott is, "whether a

Gothic domestic window must of necessity be mullioned." Here again he claims the same kind of freedom. "The mullioned window seems to have been nearly universal in English domestic works, but abroad the mullion was omitted whenever convenience suggested its absence. This is all I claim in our own works." Mr Scott does not give any opinion as to the reason of the highly characteristic prevalence of the mullioned window in England, and its less frequent use abroad. We have no doubt that the reason is to be found in the motive our climate gives us for building lower rooms than are common in continental houses. A room must be very lofty to allow of a *large* window having a pointed arch. To our minds, by far the most beautiful window for domestic purposes is that which is composed of lintel and mullions inclosing small pointed arches. Whatever Mr Scott may say to the contrary, there is a certain solemnity and "ecclesiastical" character in the form of the pointed arch, which unfits it for prevailing use in a secular, or, at least, in a domestic building, unless its peculiar character is neutralised by inclosure in a square head. Above all things, we would caution our architects, who are in danger of going to fanatical extremes in their admiration of "Italian Gothic," to avoid the hideous windows of the over-praised Doge's palace, and other mediæval works of Italy. A window of anything like their breadth, whether square-headed or pointed, is frightful to look at, unless it is divided by mullions.

"In many modern buildings in Germany the wood casements are so arranged as to give quite the effect of a mullioned window when shut, but to leave the space undivided when open, while the upper part is often filled with ornamental work of metal or other material. This system might be very readily adapted to a Gothic window, where needful." Here we must entirely disagree with Mr Scott. The reason why a mullioned window is better than a great broad gap, is simply because the mullion has the reality as well as the appearance of being a portion of the power of the wall, left, in the construction of the aperture, in order to secure the upper wall against falling in. Now there is such an uncompromising *sincerity* about all good architecture, that, to a well-educated architectural eye, the ugly gap is far better than "wood casements so arranged as to give quite the effect of a mullioned window, *when shut*." This passage is one of several proofs given by Mr Scott, that, for all his apparently enthusiastic adoption of the right architectural doctrines of Mr Ruskin and others, he has not that love of artistic truth which is the foundation of artistic genius.

On the subject of glazing we quite agree with what Mr Scott says:—"For the glazing, it seems to me that if we condemn

the old system of diamonds, or small-pattern glazing, as inconsistent with the spirit" (say rather with the mechanical resources) "of our age, and our praiseworthy desire to see clearly out of our windows, we ought, in good houses, to go at once into the opposite extreme of plate-glass, as undivided as possible. It is one of the most useful and beautiful inventions of our day, and eminently calculated to give cheerfulness to our houses." What "seems to" Mr Scott to be the best course in this matter, has also seemed to be the same thing to various other architects, who have plagiarised this writer's principles by anticipation. Mr Woodward, in particular, has proved how well plate-glass suits pointed architecture by his use of it in Dr Acland's house and the Union Room at Oxford. In connection with this subject we would throw out a practical caution. A condition of the successful use of plate-glass in pointed architecture will generally be found to be this, that the mullion, instead of being less pronounced in character than under the old condition of diamond glazing, ought to be very perceptibly more so, in order to counteract the increased effect of vacancy. Unmullioned spaces, which looked well enough where the glazing was rendered fully visible by means of the minute, lead-bound panes, would often be ruinous to architectural effect were these spaces to be simply filled up with plate-glass, which must be regarded as a practically invisible medium. This for two reasons:—first, the ancient glazing had itself the effect, through the operation of the numerous diagonal lines, of in some degree resisting lateral and superincumbent pressure; and, secondly, the eye dwelt upon spaces so glazed with a certain amount of satisfaction and interest. Now, in order to compensate for this fact of visibility and this appearance of resistance, when plate-glass is used we must have the mullions more powerful and interesting. They should be thicker, closer together, and more highly decorated, as a rule, than in ancient buildings. We consider this suggestion of importance, because the present tendency of architects seems to be in the other direction. Our improved mechanical resources enable us to widen the apertures in our buildings without diminishing the security of the wall. But architects should not forget that, although architecture must never express a falsehood—as in the window frames which look like mullions "when shut"—it ought very often to give to truth an emphasis beyond the bare requirements of construction.

Mr Scott very properly pleads for the retention of the old system of glazing in windows, or parts of windows, which are intended only to admit light, and not to be seen through—as in stair-case windows, and in the upper portions of other windows.

We do not sympathise with him, however, in his advocacy of

balconies. They seem to us to be essentially un-Gothic in character, unless they rest upon open arcades. We do not remember to have seen any successful example of a Gothic balcony projecting from the wall, as most balconies necessarily must. In our climate, moreover, they are of so little use, that it is not at all worth while damaging the Gothic character in order to obtain them. In Italy and Spain the case was different, and so, indeed, was the character of the architecture, which, beautiful as it must be allowed to be, was, after all, a sort of bastard Gothic, and admitted of various licenses quite inconsistent with the noble simplicity of our northern styles. These, we hope and trust, will never be Italianised to the degree threatened by the extravagant admiration which has succeeded to our former unjust contempt for southern Gothic. Several years ago (Vol. xv., pp. 481-485), and before architects had begun to copy the Italian Pointed style, we expressed a decided opinion as to the real value of that mode for our purposes. "Mr Ruskin," we wrote, "endeavours to prove that this style, as displayed in the Venetian palaces, especially the Palazzo Ducale, is the culminating point of the art of architecture. And he is perhaps right, as far as regards metropolitan palatial architecture, but, we think, no further. . . . In Venetian architecture we have the Lombard principle, which is to make everything of the wall, and the Pointed, which *tends* to make nothing of it, beautifully combined and reconciled; and a very decided mixture of the fantastical Arabian notion of throwing gravity and the law of gravitation overboard altogether (as the basis of architectural expression), confers upon this style a light-hearted and smiling air, which is most delightful in its place and way." These qualities, we remarked, unfitted this style for church architecture; but the plain façade and the arcade which is common on the ground storey, render it particularly suitable for street, and, above all, for *shop* architecture. We regret to observe that, since this was written, architects have been applying the Italian style chiefly to purposes for which we have a far better style of our own, and neglecting to apply it where it would be appropriate.

On the subject of roofs Mr Scott makes the following sensible remarks:—

"The fact that in Italy the roofs of mediæval buildings were generally low, I am, I confess, rather disposed to attribute to classic traditions than the direct effect of climate. My own experience of Italy would not lead me to predicate of it any want of necessity for efficient roofing. In my first night under an Italian roof, I was nearly flooded out of my bedroom by the torrents of rain which the low covering failed to exclude; while, on the last evening of my stay, I was ankle-deep in snow at a railway station in the plains of Lom-

hardy, and that after only half an hour's fall, and in the very beginning of November. Nor do my reminiscences of the furious swellings of the Arno, or of roads converted into rugged and deeply-furrowed water-courses, and in parts nearly washed away by three days' rain, impress me with the necessity of a good slope to your roof being much *less* in Italy than in England."

We are glad to have this indirect confirmation of our conviction—expressed long ago, if we remember rightly, in this *Review*—that the roof-pitch, in Gothic architecture, was a primarily artistic and not an utilitarian feature.

Mr Scott does the cause of Gothic architecture good service by emphatically insisting on its superior freedom. He shows "that the rules of the style are not so rigid as to demand the use in every case of all its normal characteristics; that, though an *arch* style, it freely admits of the trabeated construction; and that, though it delights in the *pointed* arch, it permits the use of the round or the segment; that, though the mullioned window is one of its most characteristic features, it admits of undivided openings, and that it allows great latitude, not only in the design of the window itself, which may be of all varieties, from the square opening to the arched and traceried window, but also in the minor accessories, such as the glazing and the mode of opening the lights; and, finally, that though it delights in the high-pitched roof, as that best according with the sentiment of the style, it admits, as occasion serves, of every form of roof, from the perfect flat upwards. Gothic architecture is, in fact, the most free and unfettered of all styles. It embraces every reasonable system of practical construction. This, however, is only true up to a certain point, and Mr Scott entirely omits to show where that point is; nay, we think it perfectly clear, from his book, that he has no very distinct notion about it himself. The essence of the artistic character of Gothic architecture, as distinguished from the artistic characters of other styles, is its "*perpendicularity*"—a term which has been very much abused and misunderstood, but which, nevertheless, expresses the matter as nearly, perhaps, as one word can. This character depends primarily upon the fact that the pointed arch is, and looks like what it is, a *self-supporting* arch, which the round arch is not. This constructive quality determined the immense height of the naves of Gothic churches, and an entire system of decorative features, including the spire, to harmonise therewith. In Greek, Roman, and Renaissance architecture, the shaft, and, in Byzantine, the round arch, assumed huge masses of superincumbent entablature and wall as the objects of their real and artistically expressed supporting powers. But, in the purest Gothic, as we were the first, in a former article, to prove, the idea of support

is abolished as an artistic character, and, in its stead, we have that of interminable aspiration, or "perpendicularity." Now, Gothic architecture is not quite so free as Mr Scott believes; it does not admit of balconies, as he conceives that it does, nor of heavily projecting cornices, nor of any other feature involving an unavoidable display of supporting power. Gothic clustered shafts, as we all know, do really support great weights, but their artistic expression is most elaborately and successfully managed so as to convey the notion that they rise as freely as the mounting spray of a fountain. So with buttresses; they spring from stage to stage, and terminate in airy crocketed pinnacles, ignoring wholly, in their artistic effect, the fact of the work done by them. This expression, then, of aspiration, unchecked from base to roof-ridge, is *the* Gothic expression; and, unless a building, whether secular or ecclesiastical, has a sufficient number of distinctly Gothic features—all of which, as we showed on a former occasion, aid in this expression—to convey to the mind of the beholder this peculiar effect, *it is not Gothic*. It seems to us that, in the Venetian palaces, this expression is reduced to the very lowest point consistent with the retention of Gothic character; and, if we have recommended them as examples for metropolitan architects, it is only because the conditions of modern street architecture are usually such as to preclude some of the noblest features of our native style.

The use and abuse of plaster, in architecture, is very ably and conclusively discussed in the volume before us. "It is a natural reaction," says Mr Scott, "when we find that a material, or mode of workmanship, has become debased by misuse, to treat it as *immedicabile vulnus*, and to proscribe its use altogether; and I believe that in many cases it is by far the safest mode of dealing with those materials, etc., which have become the vernacular vehicles for sham and deception. The legitimate use of a plaster material too often serves as an excuse for its base misuse, so that it may be safest to expunge it for a time from our *materia architectonica*." It is, however, almost impossible to dispense with plaster entirely, and it therefore becomes important to define its use, which, in an artistic point of view, is generally to provide a basis for, or even itself to constitute, shallow surface decoration. "Plaster may fairly encrust a wall, or an arch, or a ceiling, because it does but hide what we know to be there; but if we so plaster over a horizontal brick arch as to make it look like a massive stone lintel, or if we use corbels and brackets as if to carry weight, while in fact they are but stuck up against a wall, we demean our art to a mere pretence." Buildings of the Elizabethan period afford beautiful examples of a legitimate use of plaster, as the material of shallow arabesque

patterns. Mr Scott very properly observes, "Had the idea" (of plaster decoration) "occurred at an earlier period, we should probably have had ceilings in the pointed styles diapered over in low relief. . . . It is *our* place to supply the deficiency." This is certainly a valuable suggestion. Ceilings are the last things which modern builders succeed in decorating rightly, and yet an undecorated ceiling is intolerable. A simple Gothic diaper would be beautiful in all ceilings, even in houses making no general pretension to Gothic or otherwise architectural character. Plaster cornices, connecting wall and ceiling, are right if they are very shallow, not else.

Mr Scott discusses the several parts of a house, as subjects of Gothic treatment; but we cannot say that he often throws much light on the matter. The following censure of much modern polychromy is, however, very just and opportune:—

"Having so long discarded coloured decorations, excepting in a very small minority of our buildings, few amongst us have any knowledge of its principles, or, which is far more important, any eye for harmonious colouring; nor, in many cases, do even those who so loudly cry out for polychromy perceive very correctly the difference between good and bad decorations. For my own part, I think the majority of what is done is utterly disgusting, and infinitely worse than the Quaker drab which it supplanted. Surely the advocates of colour do not imagine that it imparts beauty irrespectively of the artistic skill with which it is applied! Bad designs or bad carving are offensive enough; but bad colouring is utterly detestable."

Of all people in the world, it seems to us that the "scientific" colourists, with Mr Owen Jones at their head, come most within the scope of the above reprobation. They justify Mr Ruskin's sarcastical recommendations to a young colourist, to learn carefully what colours are considered by them to be discordant, and to put those together as often as possible, if he would colour beautifully.

Mr Scott rightly says, that "the mode of painting the ordinary woodwork of a room in a Gothic house is one of the most puzzling questions one has to deal with." Where handsome woods are used, they should, of course, be left unpainted; but in common houses—and there is no reason why common houses should not be architecturally treated—deal must generally be much used. In an otherwise beautiful private room, by Mr Woodward, we have seen the principle of architectural sincerity carried out so far as to leave the deal woodwork bare. We confess the effect was not pleasant to us. The shade of this wood is too light, and what colour it has is not good. Moreover, there is a feeling that a touch will soil it, and the chance pressure of a finger-nail

damage its surface. We must therefore conclude that deal ought always to be painted. To paint one wood in imitation of another is clearly contrary to severe architectural principle—though, if we remember rightly, Mr Ruskin somewhere defends, or at least excuses, this plan. Staining does not seem to us to be any better, though Mr Scott sees no objection to it. Indeed, it seems rather to be a worse kind of deception than imitative painting, because it is more likely to be successful. Deal stained of the colour of rosewood looks much more like rosewood than maple-painted deal looks like maple. Mr Scott suggests what we think the right alternative:—"There is no reason why a door should be painted in plain colour: why should it not be picked out in different tints, its mouldings touched in with richer colours, and its panels decorated with delicately-designed enrichment, in simple lines and flat painting? This would cost no more than graining." Another point of almost first-rate importance in domestic architecture, is the papering of rooms. It is very rarely that good patterns are met with. We had lately occasion to choose one, and found that the proportion of patterns having a good decorative character, to those which were out of the question for an apartment to be somewhat carefully "got up," was about one in three hundred; and this was at a fashionable London upholsterer's! Those of our readers who may happen to be re-papering and painting their houses at this season, will find some valuable principles simply stated in the following passage:—

"I quite agree with Mr Owen Jones as to the desirableness of keeping our patterns flat. I think, however, that this principle is in danger of being over-stated. It is like the controversy on the same question as applied to stained glass,—one party deprecating the use of any shading whatever, while another repudiates the restriction with all scorn, and luxuriates in pictures with landscape backgrounds, and figures in their native rotundity. The true theory would appear to be this,—that, in decorating a part of a building that is in any degree functional, we should not disturb its surface by such an amount of relief, real or suggestive, as would appear to clash with its constructional requirements. Thus a floor is essentially flat; and it is manifest that its decoration should not make it appear otherwise. A vaulted surface, such as the interior of a dome, or the panels between the ribs of groining, ought not to be so boldly decorated as to disturb their essential form. The glass of a window possesses this quality in a less degree; but, as one object in decorating it is to prevent its being a mere gap in the architecture, and to make it a bond of unity between the sides of the opening, it should not, in my opinion, be made into a picture, giving the effect of great differences of distance, though moderate pictorial relief is allowable. In the same way with a wall: its functional quality *as a wall* should not be disturbed; and

therefore its decorations should generally be flat ; but on borders, or detached panels cut out from the general surface, greater relief is allowable in the objects represented. On the whole, however, I think that even paintings of the highest order, executed on the walls of a building, should have less varieties of distance, and should have a somewhat flatter treatment than is customary in detached pictures. The fact of their being painted directly on the wall so far unites them with the architecture as to claim of them a certain degree of subordination to it,—a claim, however, stronger or less imperative, in proportion as they cover a greater or less space ; for, if the painting be large, it is more essentially a part of the wall ; and if small, it may almost be viewed as having a separate existence, like an ordinary framed picture. If the papering, or the painted decoration of a room, be arranged in panels, the degree of flatness in the patterns of the borders and the panels should vary reciprocally. That is to say, that if the panel contains fresco, or other painting, as in the early Italian decorations, the border should be hard and architectural, and any foliage in it should be flat ; but, if the panel be filled with a uniform flat diaper, greater relief is admissible in the border, so that one or the other may supply the rigidity of character essential to a wall."

Mr Scott very justly attributes the triviality of subject and style, in modern painting, to the modern disconnection of the intimately related arts of painting and architecture. He and most of our readers are probably not aware that, at this moment, a very remarkable attempt at the restoration of the connection of the two arts is being made at Oxford. We have already alluded, in terms of admiration, to the new Debating Room of the Union. This building is one of the most beautiful and original of modern applications of Gothic architecture to secular purposes ; and, on its interior walls, some of the greatest painters in England have been for several months past engaged upon a series of paintings in distemper, which are wholly unlike, and, as to style, in our opinion, far superior to anything hitherto done in the way of architectural painting. Mr D. G. Rossetti, whose ordinary refusal to exhibit his works publicly has prevented him from being generally known as probably the finest colourist and the most thoughtful composer living, is engaged, in company with Mr Arthur Hughes and other disciples of the "Pre-Raphaelite School," in covering the walls of the apartment in question with a series of colossal paintings, on subjects drawn from the legends of King Arthur and the Knights of the Round Table. From all that we have seen and heard of this work, it seems to have been undertaken and carried on in a spirit of union and enthusiasm, without any parallel in the works of artists of modern times. The work, we understand, is being done entirely gratuitously, the painters and the architect not

having so much as stipulated for the payment of their actual outlay in colours and scaffolding, which must have been very large. The result, as far as we can judge from the paintings in their unfinished state, will be worthy of the spirit in which the undertaking has been pursued. We find it difficult to express, to the great majority of our readers, to whom Mr Rossetti can be little more than a celebrated name, how very original and effective, as *architectural* painting, this series of pictures promises to be—we may say, indeed, already is; for several of the ten bays of the building are at present completely painted. In the only journal in which we have seen these paintings spoken of at all in detail and with the respect they merit, namely, in the *Saturday Review*, attention is directed to the peculiar novelties of style and colouring by which these pictures are adapted to architecture in quite an unprecedented degree. Architectural painting has hitherto imitated, and, as it were, continued the architectural effects of the buildings in which they have been executed. Hard outlines, sombre colours, figures in statuesque postures and groups, have been provided, in order to “harmonise” with the architecture, the artists having forgotten that dissimilar things can only “harmonise” by contrast. Now, Mr Rossetti and his brother artists and disciples have dared to do exactly the right thing. The colours of their pictures are as dazzlingly bright as those of the most brilliantly illuminated missal; but, though their hues are as showy as those of a garden in May, they are also as subtly mixed and as soft. There are no hard outlines, no statuesque effects; and the result is, to our minds, as lovely as anything in modern art. The architecture and the painting, instead of being “harmonised,” according to the vulgar notions of harmony, are in the most powerful and mutually relieving contrast. Nevertheless, the painting is thoroughly “decorative,” and unlike ordinary canvas pictures. If we were called upon to describe, by one word, the nature of that much misunderstood quality of being “decorative,” we would say, it is *distinctness*—distinctness far more pronounced than is demanded in the details of a work which subsists independently and entirely for its own sake, and which is therefore not “decorative,” in the proper sense of the term. If we may so express ourselves, all the details of “decorative” painting or sculpture ought to be capable of being seen without being looked at. It is so with these paintings. The Pre-Raphaelites have been widely abused for their extraordinary attention to minutiae; but it is a great presumption in favour of their knowing what they are about, in making this a leading quality of their canvas paintings or water-colour drawings, that they immediately abandon it on coming to “decorative” painting, and elaborate nothing but the colour, which

never can be enough elaborated. In order to secure the absolute distinctness of every object, these paintings are so managed that all the interest centres in the foreground. We recommend those of our readers who may have an opportunity of seeing these pictures, to notice particularly, as examples of what we mean by "decorative" character, the sun-flowers in Mr Morris's picture of Sir Palomides' jealousy, the clouds in Mr Prinsep's subject of Sir Peleas and Ettarde, and the boat and waves in the Death of Arthur. There is some prospect, we believe, of this experiment in architectural painting being repeated (we hope by the same artists) on a more extensive scale in the New Museum at Oxford. We trust that we owe our readers no apology for having stepped a little out of our way to mention a series of works which, in all probability, will initiate a new style of architectural decoration.

If Mr Scott will take a run down to Oxford, he will find that all the suggestions in his "Query" about colour, pp. 84-86, have been adopted, by anticipation, in the paintings above noticed.

We come now to consider "constructive polychromy;" that is, the use of marble or bricks of different colours in the same edifice. In our opinion, the most ambitious of our attempts in this way have been the least successful. Our native stones and marbles want variety and depth of colour, and our native sky is not bright enough to bring out colours, otherwise weak, as an Italian sun does. If we are not content with plain stone of one colour, we must have recourse, for *effective* "constructive polychromy," to bricks. But coloured bricks are very difficult things to handle well; and English builders cannot do better than reflect upon Mr Scott's remarks on the cause of the difference between "an ugly red brick house" and "a fine old red brick house." "It is not that in one case the colour is crude and new, and in the other tempered by age, for the ugly brick house is often fifty years older than the one we admire; nor can we quite truthfully say, that it is the harmony of the material with Gothic architecture which pleases us, for we cannot fairly withhold a due meed of admiration for many red brick structures of Sir Christopher Wren; and there are many (?) other styles in which it has been used with excellent effect. Where, then, does the secret lie? I would answer, on the very surface, and in the obvious fact, that no material looks well if not skilfully and artistically used. This, however, seems especially the case with brick. A material of a quiet, inoffensive colour, like stone, does not look so ill when unskilfully used. If rough, there is a picturesqueness about it which is pleasing; if smooth, it gives the idea of care and good workmanship, with some suggestion of

costliness. Rich marbles, again, have an intrinsic beauty, quite apart from their form ; but brick has none of these qualities. It has not a mild, harmless colour ; it has neither a picturesque roughness, nor a finished smoothness of surface ; and though its colour may be rich, it is not in itself beautiful, like the varied hues of marbles. It depends for its good looks, therefore, more than most materials do, on the skill with which it is used ; and, in the absence of such skill, its colour is too strong and obtrusive to permit it to be harmless." Mr Scott very justly remarks, that the shape of a brick is a very important element of its architectural effect. Our bricks, of which the size and shape, until very lately, have been exactly fixed by Act of Parliament, are too short and thick. The Roman brick was about double the length and half the thickness of ours. The superior artistic character of bricks so shaped, is chiefly owing to the constructive fact, easily apprehended by the eye, that their length ensures good binding.

Mr Scott's chapter on "New Materials" is not very conclusive. This subject is one of the highest importance ; but perhaps we are scarcely, as yet, in a condition to say anything very conclusive about it. The constructive qualities of iron and glass are so valuable, that all artistic considerations, which stand in the way of their use, will infallibly be over-ridden—whether with the result of the abolition of architecture as a fine art, or with that of the development of a totally new style, it is impossible to foresee ; but certainly what has hitherto been done leads us to forebode that the first result is the more probable of the two. Suspension bridges are generally pleasing objects ; but their beauty is precisely that of a well proved geometrical theorem, and is the very reverse of architecture as a *fine art*. All fine art appeals primarily to the imagination ; but a suspension bridge appeals to a faculty which is usually found in greatest vigour where imagination is weakest. Moreover, iron, quite as often as not, takes a form which has not even this low merit of mechanical beauty. Perhaps the very ugliest thing in or out of nature is a great tubular bridge. There is something, artistically, very terrible in the thought of this "iron fate" presiding over the works of man, and making them beautiful or hideous, with a dreadful indifference to our human susceptibilities. Mr Scott does not seem to comprehend the danger hanging over him and his art. The champion of Gothic architecture, he contents himself with showing, or rather endeavouring to show, that iron can be adopted in the pointed style, at least as easily as into any other. This may be true ; but it seems to us that the one constructive property of iron, which may possibly be developed into architectural character, is a quality which is subversive of the

principles of all the three fundamental styles hitherto developed, namely, the trabeated style, including Greek and its derivative architectures; the round arch and wall style, including Byzantine, "Lombard," "Norman," etc.; and the pointed arch style: but, more particularly, that quality seems to be subversive of the latter. The property we mean is that of projection in a horizontal direction from a perpendicular support on only one side. We do not see how this property could be developed into any style which would deserve a more dignified name than "the balcony style;" but still the fact that the great constructive peculiarity of iron tends obviously to the formation of such a style, is enough to convince our readers, if they recall what we said, a few pages back, about Gothic architecture and balconies, that iron promises to be rather the enemy than the ally of the pointed style. Another most significant fact, which Mr Scott fails to notice, is, that iron is so hard as to exclude not only sculpture, but all hand decorations, which would be effective at any distance from the eye. Now, let our readers consider what any style of architecture would be, in the total absence of sculpture, and they will see that this material would be absolutely fatal in any case. Sculpture is not a mere accessory of architecture. It is of the essence of all architecture hitherto developed, except the Doric, which, however, would not be pleasing, could we look upon it with the consciousness of the fact that all its shafts and capitals, and all the members of the entablature, were *hollow*, as they must be, in iron. We confess, indeed, that we do not see how any properly architectural effect is possible in iron, except that most important of all architectural effects, magnitude. A vast edifice is always architecturally imposing, and no edifice can be architecturally effective, unless it has this fundamental quality of size. A Gothic spire, which has never yet risen above five hundred feet in stone, might easily attain a thousand, in iron; and such magnitude would go far to compensate for the meanness of moulded, instead of sculptured crockets and finials. We conclude, then, that, although "metallic construction is the great development of our age," in the matter of architecture, it does not speak so ill, as Mr Scott would have it, "for the taste of our architects, that they have done so little to render it beautiful." Iron architecture is like the unmanageable mechanical man of Frankenstein; and we do not think it astonishing that, now that our architects have "developed" him, they are at a loss to know what to do with him, or rather how to prevent his destroying them!

Mr Scott's next chapter is on "Buildings in the Country." It is a somewhat vexatious chapter, containing, as it does, profuse illustrations of a very curious fact, which we have observed,

namely, that no writings on architecture are so unpractical as æsthetic treatises on architecture by practical and professional architects. These gentlemen are ordinarily so much absorbed in the merest mechanical considerations involved in building, that when they come to anything like a general consideration of architectural beauty, they are easily distanced by their non-professional critics, who have only studied the mechanism of architecture enough to secure them against blunders in their artistical views. Let us give our readers a sample or two of Mr Scott's style, when he undertakes to promulgate rules of abstract beauty. We imagine that very few of the persons who are appealed to by Mr Scott's book, are likely to derive much information from the following architectural directions for "the ordinary villa :"—

"Its characteristics should be quiet cheerfulness and unpretending comfort ; it should, both within and without, be the very embodiment of innocent and simple enjoyment. No foolish affectation of rusticity, but the reality of everything which tends to the appreciation of country pleasures in their more refined form. The external design should so unite itself with the natural objects around, that they should appear necessary to one another, and that neither could be very different without the other suffering. The architecture should be quiet and simple, the material that most suited to the neighbourhood—neither too formal nor highly finished, nor yet too rustic. The interior should partake of the same general feeling. • It should bear no resemblance to the formality of a town house ; the rooms should be moderate in height, and not too rigidly regular in form ; . . . some of the windows should, if it suits the position, open out upon the garden, or into conservatories," etc., etc.

Surely no ghost, or great practical architect, was needed to tell us all this, and much more of the like ! We have seen the same thing much better done by a common newspaper critic, who, describing a Gothic country house, says :—

"It expresses in the liveliest manner the feelings of English comfort and English independence. The glowing brick-work, set off by slips and cornices of cold stone ashlar, bids defiance to the winter's gloom, and reminds us of the merry hearth, about which the whole edifice looks as if it had gradually agglomerated by a process of crystallization. The chimnies are conspicuous objects, as they should be, where the hearth is of so much consequence. The vast mullioned oriel make the most of the misty northern day. No interior arrangements are sacrificed to a proud façade. The outside at once declares that the inside has been the great object of the architect's solicitude. It does not court the suffrages of the public at the cost of its interior hospitalities. Every jutting gable and shadowy recess is a mystery, of which the key is only to be found in some internal convenience and comfort. And yet, with all this carelessness of what the world may

think of it, the ancient mansion in this style, carries, to our minds, a nobler air than any other form of private habitation hitherto devised—an air as much braver and nobler than that of the modern “Grecian house,” as a living face, lighted up with health, strength, humanity, and kindness, though somewhat irregular in feature, is lovelier and braver than the waxen Adonis of the hair-dresser’s shop window.”

In this passage is expressed an intelligible idea, and a tangible direction is implied; but we should like to know how a pupil of Mr Scott’s would set about making his “villa” “the very embodiment of innocent and simple enjoyment,” and “the reality of everything which tends to the appreciation of country pleasures in their more refined form!”

There is one class of building to which Gothic architecture might be applied, without encountering any of the obstacles and drawbacks alluded to in the foregoing pages; we mean farm-houses and farm-buildings. Permanence and economy are usually considered before anything else in this order of edifice; and these prudential qualities are the best foundation for a vital revival of domestic Gothic architecture, which is often most beautiful when it is most humble, and which never shirks any duty, however homely. If our builders of farms and the lowest orders of *permanent* rural edifices, would be persuaded to build on the principle of making their work as little “architectural” as possible, but letting that little be pure Gothic, then, indeed, we should be beginning at the beginning—which we have shown to have been impossible in urban domestic building—and there would be some chance of creating a really popular sympathy with an art for which, we repeat, the people, at present, do not care in the least, although they spend enormous sums of money upon it. Of course we cannot expect that such works would be put into the hands of professed architects; and, indeed, they would not be the likeliest men to do it well. The bricklayer, the carpenter, and the village stone-mason, however, would require some instruction; and, for their sakes, we entirely agree with Mr Scott, when he says: “It is a pity that no work has ever been undertaken, to illustrate the humbler remains of our traditional architecture. We have excellent works on our cathedrals and parish churches, on castles and mansions of the higher class, and generally on remains of a decidedly architectural character; but we have none upon those humble but no less interesting class of buildings. Yet I believe they would show, in a still more remarkable degree, the wonderful instinct for beauty which prevailed so long as we retained our indigenous style of building.” Every year the field for such a work is being narrowed by the decay and destruction of ancient work; but there is still enough left to constitute a most valuable series of illustrations. The

following passage will surprise our readers, who have never before coupled together the ideas of barn-building and architecture :—

“ Few of these rural structures are so characteristic as the barns ; and here the succession is much more complete than is usual in houses ; for, though the barn of one country differs greatly from that of another, each seems to adhere to its own type from age to age, with no variation beyond the gradual deterioration in taste before mentioned. We have, in England, barns of every period during the last six hundred years, and with less essential changes of construction than perhaps in any other class of building. I only recollect two important varieties of type—that with aisles, and that without—each subject, of course, to change of material, particularly from that of stone or brick to timber. The celebrated Glastonbury barn is, I suppose, the finest specimen of the stone barn without aisles. It is of the fourteenth century, and is as fine a building as many of the churches or dining halls of the period. The great barn at Ely, now destroyed, was probably the finest specimen with aisles. It was of the thirteenth century, and on a grand scale. That at Peterborough is of the same age, and is still perfect. There is a noble one at Harmondsworth, in Middlesex, which shows the same type entirely carried out in timber. The very same construction is kept up to the present day, in districts where timber is abundant—differing only in the inferior manner in which every part is carried out. It retains the mere rudiments, but in the lowest state of degradation. The barn and the dining-hall in early times were often not much unlike. At Nurstaed, in Kent, was, till lately, a hall of the fourteenth century, very much like one of these noble barns, having aisles with timber pillars ; and the Bishop’s palace at Hereford is found to have been formed out of a vast hall of Norman date, and of the same construction. This we take as a hint, that there will be no inconsistency in our applying the construction of these noble storehouses to other purposes to which we may find it suited.”

We will not accompany Mr Scott in his disquisitions on the higher orders of country architecture. These are too vague to be of much service to any one. The succeeding chapter, on street architecture, though less vague, is ineffective, from the non-recognition of the fact of that apparently inevitable impermanence, which makes it almost absurd to speak of “ architecture ” in the same breath with “ street.” We agree with Mr Scott, when he calls London “ a huge wilderness of ugliness.” We disagree with him, in imagining that it can be improved, or, indeed, made otherwise than still more base by any merely *artistic* endeavours. As you must give the painter his canvas and his colours before he can produce his picture, so you must give your architect the means of building *permanently*, before you can call upon him to produce anything having the smallest pretence to be called architectural. A London house is a semi-pemadig

structure, half-way between a house—according to the ancient notions of a house—and a tent. But, even were the objections of impermanence done away with, there are other conditions of modern street-building which are scarcely less fatal to architecture. “The primary condition of street architecture,” says Mr Scott, “is, that each house can, as a general rule, present only one part to the view, and that this part is usually a single plane, and part of the same plane with that of an indefinite number of other fronts. Legislative regulations have, from time to time, rendered this condition more and more absolute, by either forbidding, or reducing within the very narrowest limits, projections or breaks in our street architecture; so that we have now submitted to us the problem of how to produce a pleasing effect by dealing with an almost continuous plane.” Mr Scott’s suggestions for the production of architectural effect under these fatal conditions, seem to us to be very feeble and hopeless. “The balcony,” he says, “was comparatively little used in the Gothic architecture of northern Europe, though most extensively in that of the south; but it has become so usual among ourselves, that it is absolutely necessary that it should be systematically used in any attempts we make to generate a style for ourselves. Happily, our building acts do not forbid their use.” But, unhappily, the spirit of Gothic architecture does! Again: “One very valuable element in street architecture, is the individualizing of the houses, giving, so far as possible, to each its own front, clearly marked out from those of its neighbours, rather than grouping them in masses. I do not insist strongly on this, as there are difficulties about it; but I wish to call attention to the fact, that, where every house has its own individual design, the prevailing character of the architecture is, of necessity, *vertical*, while, if the houses be uniform, or grouped into large masses, it is almost as sure to be *horizontal*; and I need not say that the difference in the effect is prodigious.” Most certainly it is! But Mr Scott forgets the fact, that separate proprietorship is the only economical, and, therefore, architectural justification of such a separation of design as he recommends. Variety, obviously, for variety’s sake, as this would be, is more displeasing to the truly artistic eye, than the dullest uniformity.

In connection with this question of street architecture, we are glad to find that Mr Scott administers a little wholesome abuse to the architecture of the famous Rue de Rivoli, in Paris. “People,” he says, “think the Rue de Rivoli the finest street in the world, instead of being, in many respects, one of the dullest. That street, which is in every one’s mouth as the beau ideal of beauty” [*sic*], “consists of a house with two plain arches on the lower storey, and two Quaker-like windows on each of the others

—not a bit better than any architect's pupil could draw, after being six months in an office—repeated some five hundred times in a row." All Mr Scott's suggestions for remedying the evils of street architecture, and escaping from the vast and various difficulties which beset the pursuit of beauty in this direction, seem to us very weak and worthless. The one hope for the future of street architecture appears to us to be in the probability, or at least possibility, that our Scotch system of building houses in flats may be extended, so as to include the habitations of the higher classes. This system, if so extended, would ultimately lead to a modification of the present system of short land leases; for the houses would have to be of a magnitude too great to admit of slight, unarchitectural construction. And not only would the absolutely fatal impermanence of street-building be thus done away with, but the other great difficulty of street architecture—its wearisome uniformity—would vanish; for it is only when houses are small and low, that a considerable series of them in one pattern looks mean and unarchitectural. It was the architect's fault, that Victoria Street, Westminster, which consists of houses built on this system, was not made to look architectural. The houses in this street are substantial and large enough to have allowed of a very effectual treatment in Gothic architecture. They are entirely disgusting as they stand at present, in all the pride and vulgarity of Renaissance decoration. We have never seen the remark made, although it is an important one for street architects, that the very essence of all classical architecture, including the various forms of Renaissance, requires, in order to be even tolerable, a perfectly definite and tangible unity. The range of club-houses in Pall Mall is the finest modern production of Renaissance architecture in Europe; and here almost every house is more than distinct by character—it is locally detached from its neighbour; and every block constitutes a handsome, intelligible unity. In Victoria Street there is no such distinction of edifices. The poor perfection of which the style is capable, was, for obvious economical reasons, abandoned, and that element of indefiniteness introduced which Gothic architecture is alone able to turn to architectural advantage. A long, uniform façade, is not the most beautiful shape for Gothic architecture to take; but the common supposition, that it is incapable of taking that form, is, so far from being the truth, that it is the *only* style which can take it, without contradicting its own artistic laws.

Mr Scott, in his well-meant enthusiasm for the pointed style, endeavours to make it out that it is capable of doing more than it or any other style can. He says, for example:—"Those little streets which we find in the outskirts of London and great towns, and which contain the residences of the poor, with here and

there a little shop, are at present as offensively ugly as it is possible to fancy. A very little thought in designing would obviate this. If the windows were margined with red brick, and perhaps had simple wood mullions, the roofs made moderately high, with a continuous ridge parallel to the street, and just divided by the coped party-walls and chimney-stacks, and with plain dormer windows, these streets would at once become pleasing, and at little expense. They want little more architecture than such a mere touch as this; and our style gives all that is wanted, without the slightest effort." Mr Scott is, we are convinced, wholly mistaken in supposing that it is possible, under any conditions whatever, to make a street of very small houses in a great city look anything but mean, miserable, and worse than poverty-stricken. Is not such a street the most unmistakeable expression of one of the ugliest facts in human nature, and more especially English human nature,—namely that of the incompatibility of man with man, and his preference of a foetid pig-sty of his own to a share of a palace which is also shared by others?

In Mr Scott's chapter on public buildings, we do not find much that would interest readers of the articles on architecture which have already appeared in this Review; nor do we think that his suggestions, in that on commercial buildings, are likely to be of much use. We agree with him in admiring the handsome old warehouses of Nuremberg; but the preciousness of space in our great cities, puts out of the question a mode of construction by which six storeys out of nine were placed in the vast slanting roof. In the remarks "On the boundaries of truth and falsehood in architecture," we find some of the best things in the book. The most famous of recent architectural critics have bungled in attempting to define those boundaries. Mr Scott maintains that they are indefinable. "The confines of truth and falsehood," he says, "are just as difficult to be traced in morals as in art. A fabricated story in a newspaper and in a tale-book do not seem very essentially different; a profession by word of mouth of fidelity and friendship, seems much the same thing as commencing a letter with 'My dear sir,' and ending it with 'very faithfully yours;' and every day brings with it many instances in which the exact line of demarcation between truthfulness and deception is most difficult to define. Yet who would venture to argue from this that truth is a mere phantom, and that, because we do not always know its boundaries, and must often admit what is in a sense false to be no deception, or what is literally true to be in fact fallacious, we must give up truth as a mere Utopian imagination, and indulge in falsehood *ad libitum*?" Mr Scott shows that in art, as in morals, the intention to deceive is the essence of the falsehood which is to be abhorred,

and he gives a number of examples, by which his position is thoroughly proved. We regret that our limits will not allow us to go further, with Mr Scott, into this highly interesting matter.

The concluding chapter of this work is on "The architecture of the future." The greater part of this chapter is more than usually marked with the prevailing fault of the book, namely, an appearance of simplicity and practicability, and a reality of vagueness and impracticability. The most intelligible and useful observation in this section is, perhaps, the prophecy that the architecture of the future must unite the two great constructive principles of the arch and the lintel, more closely and vitally than they have yet been united. We have no doubt that the feeling of this necessity has a great deal to do with the extravagant favour with which the Italian pointed style is beginning to be regarded, although that style (for all Mr Ruskin's brilliant pleading to the contrary) "is, *per se*, very inferior as an architectural style to the cotemporary architecture of England, and especially of France."

Let us part with Mr Scott on good terms, by quoting, with decided praise, the following sensible and acute remarks on the peculiarity of the present position of the world in respect to architecture:

"The peculiar characteristic of the present day, as compared with all former periods, is this, that we are acquainted with the history of art. We know better whence each nation of antiquity has derived its arts, than they ever knew themselves, and can trace out with precision the progressions of which those who were their prime movers were almost unconscious. What, for instance, did the Greek know of his joint debt to Egypt and Assyria for the elements from which he developed his noble architecture? The Roman, it is true, was conscious of his copyism from the Greek, but was probably ignorant that he was only overlaying with a Grecian exterior an indigenous architecture of his own land, and that the *native* and the *imported* elements were ever striving for the mastery. Still less conscious were the Romanesque builders, that they were developing out of the ruins of an old world an element which Rome had neglected to perfect, and which was destined to generate, under a new civilisation, a style of which the ancient world had never seen even the faintest foreshadowing; and I fear our glorious builders of the thirteenth century, while revelling in this amazing production of human skill, were almost as unconscious of what they had reached, or how they had attained it. It is reserved for us alone, of all the generations of the human race, to know perfectly our own standing point, and to look back upon a perfect history of what has gone before us, tracing out all the changes in the arts of the past, as clearly as if every scene in its long drama were re-enacted before our eyes. This is amazingly interesting to us as a matter of amusement and erudition, but I fear it is a hindrance, rather than a help, to us as artists."

- ART. IV.—1. *Notes on the Constitutions of Universities, with reference to the Rights of the Scottish Graduates.* 1857.
2. *The Scottish Universities, and what to Reform in Them.* By ALEXANDER KILGOUR, M.D. 1857.
3. *Inaugural Discourse delivered to the Graduates of King's College, Aberdeen, on his Installation as Lord Rector.* By JOHN INGLIS, LL.D., Dean of the Faculty of Advocates. 1857.
4. *Report of a Public Meeting in favour of the Improvement of the Scottish Universities, held in Edinburgh, 31st December 1857.*
5. *Address of the Right Honourable SIR JOHN M'NEILL, G.C.B., to the Associated Societies of the University of Edinburgh.* 1857.

THE movement for a reform in the system and working of the Scottish Universities has of late been invested with much additional interest, and has acquired fresh life from the public pledge, given by the late Lord Advocate in his place in Parliament, to introduce, during the present session, a Bill which should deal with the wants of our academical institutions. This announcement had, owing to the enlightened sentiments and educational experience of Mr Moncreiff, raised high anticipations among the friends of rational reform; and deep regret has been felt, that circumstances have, in the meantime, prevented the learned gentleman from carrying his purpose into execution. But the promotion of the Dean of Faculty to the office so ably filled by Mr Moncreiff, has not damped the hopes thus excited, or lowered the expectations of those who look with confidence to legislative enactments as the grand remedy for all our shortcomings. Under these circumstances, it may not be deemed out of place to review the present state of the University question, and to sketch in outline a consistent scheme of academical polity. We shall take advantage, so far as suits our purpose, of the many suggestions which the discussions of the past year have evoked, but shall feel it our duty further to recommend certain modifications of existing arrangements, which have hitherto been almost entirely overlooked, and which, though necessitating but a slight addition to our present machinery, would, we are convinced, tend immensely to elevate the standard of education in our schools and colleges.

University reformers may be divided into two classes; *First*, those who admire our present system as approaching perfection, and triumphantly record its results as proof undoubted of its surpassing excellence, and who thus propose the smallest quota of change, extending little beyond increased endowments to professors, and the establishment of additional chairs. And, *Secondly*,

those who discover defects in every niche of the fabric, "from turret to foundation stone;" and who, accordingly, are ready to apply remedies of the most radical and sweeping character. That truth and discretion lie between these two extremes, will be readily conceded by all who, knowing experimentally both the Scottish and other systems of academical economy, are able to take a wider view of the University question, and judge of the merits and defects of present arrangements with an impartial eye. In order, therefore, to form a satisfactory estimate of the amount of extension and improvement which our colleges require, in order to meet the wants of the nation and of the times, it will be necessary first to examine briefly in what respects they excel, what they fall short of, kindred institutions.

The characteristic excellence of the Scottish Colleges is, the existence of an actively wrought lecture-system, combined with constant and searching catechetical exercise, under the highest responsible authorities of the respective classes. This, indeed, is the grand and distinguishing feature which, in spite of great shortcomings, has largely contributed to stamp on the national character one of its peculiar marks, and which has rendered Scottish graduates noted throughout the civilized world, for the readiness with which they turn to practical account the acquisitions of a college curriculum. It needs no elaborate discussion to prove, that the interests of sound education, and the requirements of the untrained mind, demand that a healthy intellectual circulation be constantly maintained, and a course of mental gymnastics rigorously practised, which shall invigorate and uniformly develop the whole frame of our intellectual being; which shall render it capable of thinking and acting for itself with readiness and self-reliance; which shall impart a firmness, an independence, and a dignity, to its whole character and bearing; and which, by leading it to investigate in a spirit of candid inquiry, shall create a thirst for study and a desire for original discovery. To such a result the arrangements of the lecture system directly and eminently conduce. The professor is ever in communication with his pupil, directing his energies, encouraging his exertions, resolving his doubts, and removing his difficulties, cheering him onward by friendly advice, moulding, polishing, and sharpening his faculties, and, in a word, bringing into play, in the small community of the class-room, those powers and habits which shall, in after years, be most frequently and most influentially employed in the active business of every day life. The tutorial system, on the other hand, has been found to produce men who are rather "dungeons of knowledge," than enlightened and enlightening members of society; rather machines, which repeat with clock-work accuracy, the sentiments and conclusions of

others, even to the minutest fact, than intelligent beings of elastic mind, who can use with independent power and original direction, those stores of information, and springs of action, which it is the function of a university training to supply. The blame of this, however, attaches not to the tutorial system itself, but to the careless manner in which it has been administered. From causes too numerous and too intricate to trace, the tutorial system long since fell into a languid and torpid condition, and the real teaching of the colleges, instead of being conducted in the recognised halls, and by the recognised tutors, has been, to a great extent, carried on in the apartments of the "coaches," or "grinders." These private teachers, who, it must be remembered, have no official connection with the college, and whose great object is to acquire a "grinding" reputation through the honours gained by their pupils, aim at the inculcation of a large mass of facts, selected, too often, without the slightest regard to utility, method, or mental culture, but solely with reference to the taste and style of scholarship, which the examiners for the year may be known to possess. This forcing-house system, taking the place of the tutorial, for which usurpation the many and valuable prizes of Oxford and Cambridge offer but too great temptations, has brought much undeserved obloquy on a plan of tuition, which, if steadily and energetically worked, might be made an instrument of the greatest utility in the higher departments of a university education. For the tutorial system, when properly carried out, as in some, at least, of the Colleges of Oxford and Cambridge, and in Trinity College, Dublin, is, in its essential quality, nothing but the Scottish lecture system, including daily readings and daily catechetical drill—with this important improvement however, that each tutor, who is also a Fellow of the College, and a full professor, so far as rank and functions go, has at the most only twenty-five or thirty youths to deal with, instead of a hundred or more, as with us; and that thus each student is called upon to take part in the oral examinations every day, or every second day, while it is well known that in some of our Scottish institutions, weeks often elapse between two successive class appearances of an individual alumnus. But, notwithstanding the important consideration, that more frequent drill and higher scholarship may be expected in small classes, we are so deeply impressed with the counterbalancing advantages which large classes and simultaneous training possess, that we should not for a moment think of advising that the tutorial should, in our colleges, supersede the professorial. Whatever changes may be adopted, let us adhere to the professorial system as pre-eminently adapted to form and discipline the mind.

There is another point closely connected with, and immediately

flowing from the foregoing, in which our Universities excel their southern rivals; we mean the close and searching scholarship which the professorial system, *when properly conducted*, must and does produce. The bulk of our students cannot, it is true, boast, when leaving college, of varied and extensive reading in any department of learning, but their acquirements are, generally speaking, of a minute and accurate kind, so far as they go; and it may safely be asserted, that in the knowledge of first principles, and of the fundamental laws of language and of science, they excel the *mass* of English graduates. In the years of advanced life, it may be occasionally necessary to content ourselves with a superficial study of some special branch of knowledge; but, in the school and the college, such a "mental dissipation" must be most zealously and rigorously eschewed, as inducing habits of carelessness, imparting to the *man* a constitutional remissness, and banishing every trace of that quality of *thorough*, which is so necessary to success in the battle of life. No smattering, however varied and extensive, can atone for the want of minuteness and accuracy; and the very habit which is formed in acquiring this accuracy, is one of the most valuable intellectual gains which it is possible to make. In this respect, the Southern Universities fail, whether owing to an inaccurate school training, to the practice of getting over a large amount of classical reading, or to the absence of minute and searching questions in the examination papers. It is no uncommon thing to find an English boy, or an English graduate, who can translate the higher authors with readiness and fluency; but who, if closely interrogated on grammatical facts and rationale, or other matters of sifting detail, will betray a lamentable ignorance of first principles. It is highly proper that our college classes in Latin and Greek be eminently *literary classes*, but we must scrupulously guard against the possibility of their becoming *merely literary classes*. To advocate such an exclusiveness in academical training, is to betray gross ignorance of the great purposes of a classical education. In no way then can this thorough drill, high mental culture, and literary taste, be more effectually imparted, than by that combination of the professorial and tutorial methods, which, while it ensures the services of a common directing head, and the advantages which we have seen such a guide to possess, renders possible at the same time the acquisition of an extensive and massive scholarship. The mode of this combination we shall set forth in the sequel.

Again, the prominence given in our Scottish Colleges to Logic, Metaphysics, and Ethics, and the study of these under the daily guidance of a master-mind, tend largely to form and mature the faculties, to adapt them to the higher demands of

philosophical speculation, and to enable them successfully to grapple with the most difficult problems of mental science and of government. The doctrines of ethical philosophy, and the abstractions of metaphysical speculation, form the keystone of our academical system; and these in their early study require, much more than classics, the assistance of a guiding-mind. In England and Ireland, however, these subjects are left almost entirely to text books, and private study, and “coaches;” and thus, where no systematic training is attempted, the loss to philosophy and education may be easily imagined.

On the adaptation of our colleges to the genius of the people, we need not enlarge. Their great mission has been to leaven the masses, and this characteristic must be scrupulously preserved. Our students are drawn even from the lowest classes; and returning at intervals to their former associates, carry with them an academical inspiration, which exerts no small influence on the tastes and modes of thought of our humblest artisans. But the gap between the Ogonian and the mechanic is a wide, nay almost impassable one. At length, however, Oxford has discerned the gulf, and has partly endeavoured to bridge it over, by the recent institution of extra-academical examinations, and the degree of A. A.

The defects of our Universities and the disadvantages under which they labour are, no doubt, many; but we shall here note only the more glaring. And of these, the extreme youth (and consequent unpreparedness) of entrant students, is that which naturally claims our first attention. This haste to be wise lowers unnecessarily the style of academical teaching; it prevents rapid and great progress in a large class, and thus deprives many maturer minds of that superior training which a college is designed to afford; it keeps down the character of the country schools, by drafting off unripe pupils; it takes from teachers a stimulus to high scholarship, while, at the same time, it diminishes their income, and renders their office less worthy the ambition of accomplished men. The schools are entirely competent, in the main, to train youths to that pitch of attainment which at present admits to the Greek and Humanity classes; and we have full confidence, that if called on for greater exertion and higher preparatory scholarship, they will gladly respond, and show themselves not incapable of greater results. They but slumber in the torpidity of our educational winter, and want only the stimulus of an increased demand from the colleges, and increased remuneration for their labours, to rouse them into full life and action. That these are the two great desiderata, the schools of the north of Scotland shall be our witness. The Dick and Milne Bequests, on the one hand, and the bursary competi-

tions at Aberdeen, on the other, have applied so effectual a spur to teachers—in the favoured districts especially—that the classical training in many of the country seminaries would do credit to institutions of far higher pretensions.

The want of a regular system of examinations at the end and at the beginning of each session, is another defect attaching to all our colleges, except those in Aberdeen. And yet how pressingly important is it, that all alumni should be compelled, at the end of the academical year, to give proof of their diligence, and to show in public trial at the opening of a new *semestre*, that the summer has been employed in piling and enlarging the stores of a winter's acquisition. In consequence of this defect of system our students are wholly unfit, at the end of their curriculum, to stand a rigid examination requiring minute philological and historical knowledge, with extended reading in classics or science; and we do not wonder that, in the race for civil and military appointments, given by comparative trial, they are left far behind, when matched against students from Oxford, Cambridge, and other colleges, in which the degree competition is kept constantly in view, as the end to be arrived at, as the point of junction to which the lines of the *quadrivium* converge.

The paucity and worthlessness of the prizes held out to superior talent and industry, we reckon as not the least of the disadvantages under which our institutions labour. Compare us in this respect with Oxford and Cambridge, and how do we show in the juxtaposition? The southern institutions have, it is true, suffered much by repletion; and we have no desire to rival them in wealth, or in the corruptions of system, to which their apparent blessings have directly led; but we *do* wish a reasonable amount of encouragement to be held out to those deserving youths who have the will to work and the ability to conquer. The poverty of our Universities and High Schools is a stain on the national character, and we are utterly at a loss to account for those testamentary freaks, which have neglected the higher education, while they have crowded the Scottish capital with palatial edifices for the most elementary instruction. Thus, whether a lengthened study of certain branches is to be encouraged, or higher attainments in the *few* secured, or additional chairs endowed, or aged and infirm professors pensioned off, we look in vain for funds to effect any of these good objects. What a reform might Donaldson's princely mortification ere this have wrought, if judiciously applied to the extension and improvement of our colleges and higher schools!

The shortness of the college session, of which many have complained, is less of an evil than the inexperienced might suppose. If colleges are to be mere cramming schools, then by all

means lengthen the term of academical attendance to nine months instead of six; but, if they are to remain, as the model-farms where an intellectual cultivation is conducted, where the best seeds are selected, and the best modes of treatment indicated, then six months afford ample time for the hard grinding work of laborious mental occupation. Still, it cannot be denied that the summer recess is well nigh lost by our present arrangements; and it shall, therefore, become our duty, ere we close this article, to suggest a means of employing the long vacation to better purpose.

Of other defects which adhere to our University system, we may mention the meagreness of the college course, and the absence of text books on subjects kindred or collateral to those which form the basis of professorial prelection. And no less to be deplored is the weakness of the teaching-staff, which is notoriously insufficient for the thorough working of the classes, and for the full representation of subjects, whose intrinsic value, and whose bearings on society, render them objects of prime importance in an academical curriculum.

Nor must we forget the little consideration which is attached to graduation honours. The apathy of the clerical, legal, and medical professions, in not demanding from their candidates a degree in arts as a passport to the special duties of their respective callings, is unaccountable; and, in the case of the first two, inexcusable, whether we regard the reflex influence, which such a regulation would exert on the general education of the country, or the direct bearing it would have on the character and interests of the learned bodies themselves. The practical difficulties in the way of such a compulsion are by no means insurmountable; and if the colleges do their duty, these will be absolutely *nil* in the case of law and divinity. A large proportion of the clergy already graduate, especially in the Aberdeen Colleges, where the steps to Degree are *gradual*, and all who look forward to theology as their goal, approach graduation; so that in their case, the hardship would be a very trivial one indeed; while the Bar is replenished principally from that class of society, to which a little additional delay and expense are matters of comparative insignificance. The Faculty of Advocates have recently attached a premium to graduation; and we trust that, finding the good effects of the regulation, they will ere long exact a degree from all their probationers. With the medical profession greater caution must be observed in introducing any change, but the sooner a guarantee of an adequate preparatory training is required of every embryo medicus, the better will it be for the profession and the public.

It should be known, that in the Episcopal Church of England and Ireland graduation is an indispensable condition of license—

that a similar certificate of education is required by the Irish Bar, and all but required by the English—and that the Universities of Oxford, Cambridge, and Dublin, admit as graduates in medicine only such as are also graduates in Arts. In this last case, however, the number of graduates is very seriously diminished by the expense of the Arts' course.

Many defects of greater or less magnitude remain to be noticed ; but the space to which we are limited prevents us from discussing them in detail. Contenting ourselves, therefore, with the incidental mention which they shall receive, in bringing forward our scheme of reform, we proceed to lay before our readers the Remedies which we deem sufficient to restore to our Colleges that honourable reputation which they long possessed among the institutions of Europe. Hitherto our remarks have had reference principally to the Arts' curriculum, and to it, as the foundation of all professional training, shall our remaining observations be mainly directed, though the wants of the other Faculties, especially Divinity, cry loudly for a competent expositor, and a liberal reform.

The remedies for existing defects naturally range themselves under two heads—those which have reference to the political administration of University matters generally, and those which deal with the internal organization of curriculum and the teaching apparatus. In regard to the former, some have advocated an infusion of out-door blood into the managing body, and have claimed for graduates a chartered right to a voice in the decisions of the University senate. That *Senatus* meetings would be much improved by greater publicity being given to some of their proceedings, and by the introduction of a few men of less academical bias than the professors, at the discussion of financial matters, and the exercise of the elective power, we have every reason to believe ; but we do not see that any feasible proposal has yet been made to effect this desirable result ; nor do we mean to suggest any other than the admission of the Press. It must be acknowledged, however, that the idea of the graduates' *chartered rights*, has been entirely exploded by the sagacious and pains-taking author of the pamphlet, entitled, "Notes on the Constitutions of Universities ;" and most of the supporters of the graduates' claims have now been reduced to the plea of *utility*. It is extremely probable that graduates will take a greater interest in *Alma Mater*, if she confer on them certain privileges—making them, for the time, patrons, of a kind, and holders of a power, however small ; and if the graduates are pleased, and the Universities satisfied to grant the concession, we offer no strong opposition—but on *one condition*. If, however, the proposal be

pressed beyond a question of expediency, we must refuse our assent. We see no solid grounds for the demand, either in principle, precedent, or parallel. Many of our reformers are, in their zeal, led astray in this, as well as other matters, by the contagion of English example, and stay not to inquire whether the cases of Oxford and Edinburgh be similar, and whether the principle for which they contend be in itself a sound one. Why should the mere payment of four years' fees, to different professors, entitle an individual to take part ever after with those professors in the passing of statutes which are to regulate University matters, and in electing officers who are to administer her concerns? If the claimant of such privileges has been an attentive and diligent student, has he not received better value for his money, in a six months' session, than he is ever likely to procure again for a similar amount? and, if he take the degree of M.A., does he not expect from it an advantage fully commensurate with the outlay? In a commercial point of view, therefore, the college and the student are fairly quits; but, if we examine the relative claims more narrowly, we shall conclude that the obligation is all on the part of the student, and not on that of the college, which supplies capital more cheaply, and in greater measure, than it can elsewhere be had on equal terms. And, accordingly, if our Universities commenced an agitation, having for its object the collection of funds from former graduates, we could appreciate the justice of the appeal, and should second the demand with hearty approval. But, when a "Rights' Association" is formed by men who *have* never contributed to a fund for the foundation of prizes, the endowment of assistants, the pensioning of aged professors, or for otherwise benefitting the cause of literature and science in their foster-mothers—who do not propose to bind themselves to any annual contribution for such purposes—and who do not lie, or mean to lay themselves, under any responsibility in reference to academical teaching, or University management, we confess our inability to discover the grounds of their appeal, or to advocate their alleged claims, further than, as already stated, that the arrangement *may* prove of utility to the colleges, in increasing the number of students by means of these interested canvassers, and in creating a greater demand for Degrees. Privileges of the kind demanded should be sought on the ground of benefits conferred, or of responsibilities incurred. So soon, therefore, as the Scottish graduates contribute, say a guinea or thirty shillings annually, to the college revenues, for such purposes as those suggested above; or so soon as they return to the primitive practices of academical residence, teaching responsibility, and community of interest, we shall gladly favour their pretensions.

Nor does the demand for Parliamentary representation seem to rest on a better foundation. The desire for English models has led us into many misconceptions, and the capricious interpretation of terms has caused much confusion in our recent discussions on University matters. Thus, some have rushed to the conclusion, that because the English Universities enjoy Parliamentary representation, so should the Scottish. Now, we do not mean to go at length into the argument of this question, but simply remind our readers of two important considerations which should not be lost sight of in our reasonings on the subject. The first is, that the privilege of representation was conferred on the English Universities, and on Trinity College, Dublin, by a Diploma of James I., in defiance of the strong opposition of the Commons, to serve, it would appear, his political purposes, and gratify his pedantic vanity. And the second, that the electoral franchise in the colleges was, in the first instance, bestowed on the "Chancellor, Masters, (*i.e.* Teachers) and Scholars," who alone were the regular residents. Residence, therefore, seems to have been the qualifying condition; and, as the college rooms of the Masters and Scholars were their castles and their domains, and as the great majority of them had no voice in any other constituency, the reasons for admitting them to citizens' rights were not only feasible but urgent. The extension of the franchise to Masters of Arts, on the payment of a fixed annual sum, whereby their names are kept on the college books, and a fictitious residence is acknowledged, was an arrangement of comparatively recent date—still keeping in view, however, the original ground of qualification. It does not appear that the property element came into consideration.

If the Scottish Universities can present any analogous claim, or can form such a constituency, they at least deserve to be heard; but it is a matter for debate, whether it would not be better to amalgamate the constituencies of Oxford, Cambridge, and Dublin Universities, with those of the cities or counties in which they are respectively situated, and apportion the seats thus set free to some of our inadequately represented, or unrepresented, burghs, than, by enfranchising Scottish graduates, to extend an existing evil, and perpetuate a system which has produced but very little practical benefit, while, on the other hand, it has caused much mischief. Education is doubtless a public interest, but it is not an independent and isolated interest, and does not need a separate representation any more than the manufacturing or shipping interests. But education, in the sense in which the agitators use the term, is *actually more fully represented* in the House of Commons than any other individual interest whatever, not excluding the shipping, manufacturing, or banking; while

education, in the proper signification of the term, would not be adequately represented by the proposed plan. Let those, however, who have the interests of Education at heart, be energetic and persevering in sounding, in the ears of Parliament and the Government, the disadvantages under which she labours, and the restrictions which cripple her exertions, and they will gain as ready a hearing and as willing redress, as the shippers, manufacturers, and bankers have gained by their importunity. For there are very many gentlemen in the House of Commons who, we feel convinced, are both quite as ready to identify themselves with the cause of higher education, as even "the Honourable Member for the Scottish Universities" could be, and quite as able as any man likely to be elected by a graduate constituency, to advocate, with proper "pressure from behind," the interests of education and of learning. For the demand of such an "improvement" as Parliamentary representation, we do not see any reasonable grounds; and we regret that the energy which has been spent on its enforcement has not been directed to the discovery and amendment of defects which have long been tolerated in the internal administration of the teaching Faculties.¹

But we turn with pleasure to the second class of remedies, which are of far higher moment, and of more direct and practical bearing, than those which we have already discussed. And foremost among these, we reckon *compulsory graduation* for admission to the learned professions, including Teaching. The degree of M.D., the title of Rev., and the appellation of Advocate, pre-suppose a certain amount of training and of technical knowledge, fitting more or less for the exercise of the functions proper to each class; but they are no guarantee for general culture of mind, or for the possession of a liberal education; and though many men of superior attainments may be found in these professions in Scotland, still it cannot be denied that few will compare with their English-reared brethren² in *extent* of acquirements. We are a thoroughly practical people, and far more readily than the English turn to account our small academical gains; and if, therefore, a plan can be devised which shall give

¹ [We regard it as a proof of the great interest taken at present by educated men, in the discussion of the proposed remedial measures, that, in two Articles of this Number besides the one devoted specially to the subject, earnest attention is given to the reform movement. Our readers will notice, that the writer of the Article on Parliamentary Government, takes a wholly different view of the question of University Enfranchisement from that advocated in this Article. Though our own opinion coincides with his, we have not interfered with the statements made above, because we believe that a free expression even of antagonistic views, is fitted to be helpful to a satisfactory solution of this question.—*EDITOR.*]

² We mean, of course, those who are reared at either of the great Universities, and not the multitude that issue from the mere medical schools, or that purchase their degrees, after study or no-study, at St Andrews or Aberdeen,

us the Englishman's massiveness of scholarship, together with our eminently practical turn and habits, it deserves our highest commendation. Such a result seems quite within our reach, by rendering the Arts' course imperative on all professional students, if at the same time we adopt such modifications of system as shall ensure the vigorous working of our undergraduate classes. If a youth have passed, with diligence and credit, through a course of classics, mathematics, ethics, logics, and metaphysics, he will apply himself with greater ease of comprehension, and greater profit, to the special sciences which await him as a student of medicine. The foreign terms with which every department of natural science teems, will be more thoroughly understood and more readily remembered; the habits of reflection, taste, and judgment will be nurtured and confirmed; the laws of strictly professional science more radically and more fully apprehended, as being founded on the elementary principles which the Arts' course has inculcated—the powers of reasoning directed and moulded—the foundations of a rational jurisprudence more solidly laid—and the mutual relations of mind and matter more clearly perceived. Doubtless many successful practitioners are made without this ado; but the direct result of a mere professional training is to produce empirics, and not ornaments of science and of society. We say the *direct result*, for many minds triumph over all hindrances, and, while they compel us to admiration, leave us at the same time to regret that they had not early enjoyed the benefit of an enlightened education, whereby they might have gained to the world years of the working of a powerful and cultivated intellect.

Of what benefit a similar course would prove to the students of Law, of Divinity, and of Pædeutics, we need not show by special illustration. The principle of an Arts' training is already admitted by the legal and clerical professions, in the regulations which exact attendance on certain college classes, or which put a premium on graduation; and the step to be taken is but a small advance on their present position. This advance will, we trust, be at once made; and we earnestly urge on the coming Assemblies, and on the Synod of the United Presbyterian Church, to enact that, after the year 1862, a degree shall be necessary for license. If the undergraduate course be concluded in three years, a degree should be made a condition of admission to the Divinity Hall; but, if it extend over four years, the last session might perhaps be divided between Arts and Divinity. We consider this compulsory graduation¹ of professional students a

¹ We are rejoiced to see that the Medical Bill of Lord Elcho contemplates graduation in Arts, or an examination on the subjects of the Arts' course before a competent tribunal, as the only passport to the strictly professional examination of the proposed Medical Board.

matter of so vital moment, that we place it at the foundation of our scheme, believing that upon its adoption will largely depend the success of any new measures. Improvements may, it is true, be introduced without this regulation; but with it the colleges will wield a stimulating power, both over University students and country schools, the amount and results of which few can conceive. Let us take good heed, however, that, while the inducements to graduation are increased, the expense of the diploma be, at the same time, maintained at a low figure. For this purpose, let the encroachments of the stamps' collector be resisted; and let such arrangements be made, as that no professor shall individually benefit by the bestowal of any academic degree, whether merited by examination, or granted *honoris causa*. This latter restriction we consider a most important proviso.

The certificate of a liberal education being thus provided for, and the goal of a University career established, we proceed to the consideration of an entrance examination, as the first step towards the desired consummation. Our colleges do not stand alone in having no entrance course; but we believe they do stand alone in having a purely elementary class in Greek, and an *almost* purely elementary class in Latin. Many, grounding their arguments on the former circumstance, are of opinion that discretion, and a sense of personal credit and advantage, will, in a few years, serve all the purposes of a regular scholarship test; and there can be little doubt but that, if our junior classes were swept away, ways and means would be found to acquire the necessary preparation for the second class. But a settled entrance course, with a strict entrance examination, is accompanied by advantages which do not appear upon the surface, and which an ill-defined standard of excellence cannot produce. To some of the more valuable of these we invite the serious attention of our readers.

An entrance course, framed by the University authorities, and altered by them from time to time, as occasion may require, gives to the managing Faculties of our colleges (which, we shall presume, are composed of men of high scholarship and large experience in tuition) a distinct voice in the school education of the country, and constitutes them into an Educational Board of perhaps the least objectionable kind that could be devised. It tends directly to produce uniformity of action and of training in the elementary seminaries, instead of the various, and too often absurd, systems now prevalent; and, while it supplies the raw material, it leaves ample room for the display of individual plan, energy, and judgment in the manufacture. It enables a classical professor to estimate what amount of attainment he may expect

in his entrant class, and to decide the point from which he should start in his prelections: it affords him a definite *something* to which he can refer for illustration, parallelism, and confirmation of grammatical principles; and relieves him from the heterogeneous mass of students to the varied requirements of whose widely different sections he finds it almost impossible, under the present system, to adapt his teaching. It frees the college from the necessity of puerile drill, and enables her to proceed at once with the performance of her proper functions: it excites the energies and extends the usefulness of her professors, and adds to her reputation.

To the schools of a country, on the other hand, it acts as a most powerful stimulus to exertion. The Entrance Examination Hall is the arena on which the gymnasiarchs are tested, through their pupils; and, on the appearance made by the latter on the day of competitive trial, much of the future success of the master, in regard both to pecuniary gain and official promotion, is made to depend. It places the hard-working schoolmaster of a country parish on the same footing with his metropolitan rival, since the course and the prize, as well as the means of gaining victory, are equally open to both. But, to be *highly* effective in this respect, the entrance examination should be a *public competition*, conducted partly by written papers, and partly by oral answering; not by one professor in his class-room, but by an examining committee of the Senatus, in presence of the University authorities, and with all the pomp and countenance of University sanction. Parchment certificates—say one for every fifth entrant, or even a published list of the candidates, arranged in the order of merit, with the school at which each individual was educated—would, we are convinced, when coupled with a proposal to be made hereafter, apply such a spur to teachers, over the extent of Scotland, as would, in a very few years, educate, renovate, and elevate the whole scholastic profession. Institute some prizes, be it mere honour, and the examination will effect for Edinburgh and Glasgow what the bursar competition has done, in both Latin and Greek, for Aberdeen. But, further, such an initiatory ordeal operates most beneficially on the student himself, in compelling him to refrain from entrance till he has arrived at somewhat of a mature age and respectable scholarship; in affording him time and opportunity for gaining an acquaintance with history and general literature; and in ripening his powers of observation and reflection, so that he may be enabled to derive the greatest possible amount of benefit from a University education. It confines him to well-defined area, with the minutest localities of which he has the strongest reason for making himself intimate; and thus, at the very threshold of his

advanced studies, it inculcates the invaluable habit of doing well whatever is done.

The great objection which has been urged against an entrance examination, is, that it will exclude from our seats of learning many of those poor, hard-working, *seri-studiorum* men, who are the very bone and marrow of our country; and admit only the youths whose means allow deliberate and minute preparation for the competition. Did we for a moment imagine that such a result would flow from the proposed arrangement, we should be the last to advocate its adoption; but we feel entire confidence, that, under proper regulations for the due management of the apparatus, no injury like that which is apprehended would be inflicted either on individuals or the country. To avoid the dreaded effect, we would propose—First, That several entrance examinations be held during the year; so that, if a candidate fail at his first trial, he may make up his deficiency before the end of the period for entrance, and thus, by a second and more creditable appearance, avoid the loss of a session. The suicidal facility of the plan now in operation in Edinburgh is palpable; it allows only one entrance trial in the year, but permits a rejected candidate to proceed with his studies—thus making the professor his own “grinder,” to prepare for his own second examination of the “plucked” entrants; and, notwithstanding a second failure, the veriest dolts and most incorrigible idlers may, at the end of the session, demand a certificate of attendance, which a professor cannot refuse, and which is all that presbyteries exact. This puts a premium on idleness and mal-preparation. Secondly, That two of these entrance examinations be public competitions, with the “order of merit” duly arranged and published; that one of them be held at the close of the school session (end of June or July), when the struggle for First Place will be principally among the pupils of burgh seminaries; and the other at the beginning of the college session (end of October), when boys from the remote country districts, and students of mature years, would form the great majority of entrants. Thus, town schools would be compared with one another, and country schools with one another. Thirdly, that besides these public admissions there should be opportunities for private entrance afforded, say twice in the year, at convenient times, when the *seri-studiorum* class, and such as found their time and means unequal to an extensive preparatory course, might present themselves one by one before a sub-committee of the professors, and be permitted to select for their own trial, say one Latin and one Greek author, out of the number prescribed for public entrance. This would save the feelings of the more tender, and so lighten the labour of preparation that no serious

obstacle would be presented to the really meritorious. We know a good deal of what Scottish students can do, have done, and will do, and pledge ourselves that that spirit, which from hard-earned wages saves L.20 per annum for the expenses of a college session, will save one hour per day for the preparation of a not oppressive course. Mere amateurs, who have no ambition for a degree, and who mean to spend only two sessions at college for some special classes, may, without detriment to themselves or the college, be admitted as *private students*, liable to no examination. In these arrangements regarding entrance, as well as "pass" and degree examinations, it must be remembered that, in all countries and in all colleges, a great deal of laxity is necessarily permitted, for there is no royal mode of turning idlers into industrious men; and the great aim of all legislation in these matters should simply be, to bring up to excellence as many as possible, and to leave below mediocrity as few as possible. The difficulties which many find in the way of this and other desirable improvements will speedily vanish when the experiment is made.

Next to the advisability of seeking from students at entrance a proof of their ability to profit by college prolections we rank the necessity of demanding from them, at frequent intervals during their academical career, satisfactory evidence that the lessons of the professor have been duly comprehended and carefully digested.¹ The principle of *classification* should be most rigorously acted upon in all such examinations; for, as a stimulus and a discipline, the value of such a combination can scarcely be overstated. The certainty of a coming trial, and the character of the certificate to be gained thereby; the dread of a low position in the classified list; the well-grounded hope, that fame will precede the diligent to the bar, the church, or other profession—will ensure earnest attention during the hour of lecture, and unremitting industry in home preparation; while the examination itself will discover to each his own deficiencies, make him aware of his capabilities, and fix on his mind the facts and principles of a winter's acquisition.

And here we would protest against the doctrine, that it is an absurdity for a professor to examine his own students, and pronounce either on their comparative merits or on their fitness for the honour of graduation. Of the insult thus offered to the professorial body we shall say nothing, but express our firm

¹ In the northern colleges, such a system has long been in active operation; and to its influence we attribute the remarkable success which has attended the Aberdeen graduates, in competing with the alumni of Glasgow and Edinburgh for the scholarships and bursaries at the disposal of the several churches. The examinations are held at the beginning as well as at the end of each session, are conducted by paper, and are highly effective of good results in and beyond the college.

conviction, based not more on theoretical than on practical grounds, that none but the professors are competent either to do justice to the students, or to make the paper what we have hinted it ought to be. Examination sheets compiled by paid or amateur examiners, who do not know anything of the examinees, and who too often strive to show off their knowledge, are more frequently a chance-directed farrago of crude individualities, than a graduated and connected series of well-digested questions to elicit general principles, and to test the judgment in applying the doctrines of previous teaching. Thus we creep into a system of *cram*, and of *crack questions*, and a rational and philosophic training is ignored. We trust, therefore, that the professors will stand upon their dignity, and upon the ground of public utility, and refuse to countenance a proposal which implies a perpetual vote of censure on the entire body. To assessor-examiners we have no objection, as they may somewhat lighten the load which we shall by-and-by propose to lay on the shoulders of professors; but they should never supersede the proper and responsible head, and their functions should be mainly *oral* examination. There are few literary tasks more difficult and more delicate, than the framing of a good and well-balanced examination paper; minute and extensive knowledge of the subject, large experience, and strong common sense, are indispensable to success.¹

To our next suggestion we crave the serious attention of all University reformers, and more especially the teaching body of professors, both because it has scarce been mentioned heretofore in the discussions on reform, and because we consider it *the* remedy which strikes at the root of the greatest defect in our University system. But, before proceeding to lay down its provisions, let us remind our readers that the purposes of a University education are two—First, to train the student in such a manner, and with such instruments, as shall best conduce to develop and rightly influence the moral nature, and to direct, brace, and give action to the intellectual faculties; and, secondly, to impart such an amount and kind of information, as shall, so far as consistent with higher purposes, exhaust the several subjects of study, and

¹ The examination papers, if drawn up on a methodical plan, and with judicious selection, so as to be at once a *resumé* of the session and a *model* for study, by being annually spread over the country would direct to a proper line of reading, those schoolmasters or students, who, from remote residence or other cause, know little of the plans pursued in our higher institutions, or of the kind of knowledge which youths should possess before entrance. The circulation of the examination papers by means of the students we reckon a most important point, as, perhaps more than the prescribing of an entrance course, it gives a directing power in the education of the country to those whose position at the head of the teaching profession entitles them to respect and confidence.

be generally useful in any of the walks of practical life. We must remember, however, that of these the first is the grand aim and object of a primary education; and we must scrupulously guard against the possibility of modern utilitarianism converting our mental training apparatus into a mere "useful knowledge" *grubber*. Our first great care, therefore, must be to organise a course whose subjects shall be of a refining and elevating, and, at the same time, of a practically useful character; and, further, to make provision for the special teachings of the professional schools—Law, Medicine, Divinity and Paediatrics. But we must recollect, that even our Arts' course is so far a professional course, since from it directly proceeds that large body of students who devote themselves to the teacher's duties.

One other remark is necessary, as preliminary to the proposal which is to follow. We have already spoken of the universally admitted excellence of our colleges, in reaching the masses, and affording to the poorest class of our population an academical education, cheap in the preparatory training, and cheap in itself. Now this is exactly one of those good things which, by being carried too far, may become a blemish, nay, a serious evil. In our regard for the poor and the ill-prepared we sacrifice the wealthy and the well-prepared; and the style of teaching in most, if not all, our colleges, is pitched on that scale which suits the advance of the former. The ill-prepared form, no doubt, the great bulk of the entrant class; and thus a conscientious and judicious professor has but one course open to him—to consult the interests of the majority. In a large promiscuous class, it is impossible for a professor to enter into the higher departments of his subject, with that regularity, depth, and *fitness*, which are absolutely required. The zealous, energetic, and competent must be separately provided for, if we expect those results which all seem to desire; yet our present system makes no provision whatever for carrying higher in their education those ambitious and better trained youths, many of whom are every year to be found in all our colleges. We know what Scottish students *can* do in the way of hard work; and we have no hesitation in saying, that, had the more noble of them but the opportunity and the encouragements to extend their reading to classical authors or scientific treatises, which in a heterogeneous class it would be more than folly for the teacher to attempt, we should speedily find a swarm of youths annually passing forth from our University courts, fully able to compete with Oxonians and Cantabrigians in the extent and massiveness of their scholarship, while they would far excel them in the fineness and practical bent of their general intellectual culture. Now it is for this small aristocracy of talent and industry that we are

anxious to provide—for those men upon whom depends the fame of our Universities, and who must be made the engines whereby to elevate the standard of education, not only in our academical halls, but also in the several professions, and over the whole country; for it is the *few* of a college, and not the *many*, who gain for it celebrity; and to the *few*, therefore, as well as the many, it is our solemn duty to have regard. Hundreds of mediocrities, such as we send forth from year to year, will do less for the solid credit of our colleges and the higher learning of our country, than a dozen distinguished scholars annually produced. We do not wish to form a *learned class*, but to make a large *class learned*; and, while we maintain simultaneous training for all, to provide extra teaching for those who desire to avail themselves of it; to encourage the *few*, and to start them on the road to raise their own fame, and revivify the withered bays of our academical institutions.

This defect, which we have endeavoured to illustrate, was many years ago felt by Mr Pillans, to whom the education of our country owes so much; and, with his wonted good sense and educational chivalry, he sought to remedy it, so far as individual exertion could, by adopting a system of “private studies,” to encourage the cultivation of the higher classical authors. The extension and public acknowledgment of this extra private course, which is more or less adopted by different professors, are the objects which we desire to urge in the *Remedy* now to be brought forward.

To meet the wants of our alumni, as above set forth, *let two parallel courses of study be prescribed in the several classes of the Arts’ curriculum*; one for all students, without distinction or exception; and *the other*, an entirely optional course, for the small aristocracy of which we have spoken.¹ To render this course effective for good, three things are necessary: 1st, That prizes for excellence be provided; 2^d, That additional examinations be instituted, at which the volunteers shall compete among themselves for honours of first and second grade; and 3^d, That these candidates for honours be separately lectured by the professor as often (say once) in the week as shall be found necessary to overtake

¹ Thus, while the Professor of Greek reads with his entire junior class during the first three months a portion of Xenophon’s *Anabasis*, he might, at a separate meeting, prelect to his volunteers a play of Euripides, directing them to read, as collateral helps, such works, or portions of works, on history, philology, and criticism, as he might deem most appropriate companions to the text-book, and most suitable to the advancement and capacity of the class. During the latter three months a similar course might be adopted, and so also in the different classes of Latin and Greek. The Professor of Mathematics, again, while confining his *polloi* to Euclid, Algebra, and Plane Trigonometry, could exercise the better students with Analytic Geometry, higher Algebra, and Spherical Trigonometry, or other desirable subjects. We give these examples not as the best to be adopted, but to illustrate our idea.

the work prescribed. Of such extra competitions there should be at least three during the year—one in January, on the subjects prescribed at the opening of the session; another at the end of the session, on subjects prescribed in January; and a third in the end of October, on subjects prescribed at the conclusion of the session for summer reading. At all these competitions rewards should be given; books or money once a year, and parchment certificates on the two other occasions. But this extra course, with its examinations and prizes, must become a regular and important part of the University system in every branch of study; and *ecclat* must be added to it by the weight of University promulgation, the solemnity and dignity of University sanction, the honours of the University seal, and the glory of publicity, ere those results can be looked for which such an arrangement is calculated to secure. The exertions of an individual professor, however enthusiastic, will not suffice to call forth that zealous and unwearying toil which the dignity of a public hall, and the honour of a public prize, with the countenance of patrons and senatus, and newspaper publicity will readily produce and steadily maintain. None but parties closely interested ever dream of wading through our gigantic prize lists; but were a *few* names recurring several times during the year, as the honour men of their class, they would become “household words,” and this circumstance alone would prove a great stimulus to those who depend for support on their own exertions, and, in fact, to all who are influenced by the love of approbation in even a small degree. To pushing men it is of the utmost importance to make for themselves a *college character*, which is certain to follow them to the bar, to the pulpit, and to the consulting-room; and, therefore, we fear not but that self-interest would soon swell the ranks of the aspirants for honours, and of the well prepared entrants, and thus raise the standard of admission and of teaching.

Many advantages besides that of extended reading and more copious information, would flow from the extra course. In the classical department our students would be early compelled to devote their attention to such collateral and illustrative works as the history of Grecian and of Roman literature, by Müller, Mure, Grote, Arnold, Dunlop, and Browne; to the extended grammatical and critical labours of Buttmann, Madvig, Kühner, Zumpt, Donaldson, and Key, etc.; and they would thus be instructed in those very topics in which they invariably fail when brought into competition with English trained alumni. There are no tutors like these; and it is manifestly our duty to adopt *that* tutorial system as soon as possible. The system of “extra” should be vigorously continued through all the branches of the Arts’ curriculum, and all the years of the undergraduate course, so

that students should not only have an opportunity, but even be under the necessity, of keeping up for degree examinations, outdoor competitions, or special professional studies, the information acquired in successive years, and that young men might be encouraged to follow out with exhaustive reading the subjects which have been chosen as their forte. But further—our schools would soon, under the operation of this system, be manned by scholars of a higher tone, whose influence would make itself felt on primary education generally, and on college entrants especially; and in a very few years the elementary teaching so much complained of would be abandoned, and the junior Latin and Greek classes might with safety be given up. The summer recess, too, would be turned to the best account, because being terminated as proposed by one of the three extra competitions, as well as a pass examination for all entrants, whether joining for the first time, or rising to a higher class, it would be very generally employed to mature and extend past acquisitions, or to prepare for the higher struggles of the coming ordeal. What a ready and satisfactory means, moreover, would thus be afforded for preparing a thoroughly qualified staff of assistant professors (we do not like the term tutors) for the working of the college classes, and what activity and vigour would be infused into University life!

Some may fear that this forcing process would introduce a system of cramming and grinding, which it is of the utmost moment to discourage. But it is entirely in the power of the professors and examiners to prevent such a result; or at worst to make the “grinders” co-operate with them for good. By variety of question, a systematic process in examination, a change in subject, and a freshness in illustration, the teacher may completely baffle the arts of any dealer in “crack questions,” who may seek to establish himself as the vendor of passports to honours and prizes. But to prevent abuse, care should be taken that none be allowed to compete in the extra course, who are not more than respectable in the regular class, and that each examination paper be composed partly from the *polloi*, and partly from the optional, course, in order that the primary duty of all be not neglected by the *few*. For this reason alone, with the fear that a body of non-professional examiners would soon call into existence a system of “coaching,” we again remonstrate against the idea of handing over to others the examining power of the professors.

Of the help to professors in discharging their increased duties we shall speak immediately. Meantime, it may be stated generally, that the extra labour will not, after the first year, be so great as might be supposed; and that a single individual may

effect much if the examinations be judiciously arranged, and if he spend honestly the months of his long vacation. The expense of books and the overwork of students compelling them to refrain from private tuition, are but petty considerations when weighed against the immense benefits which would accrue to all, from the increased labour and extended range; and we trust that no "pity the sorrows" argument will interfere with a trial of these new appliances. That all the members of a community should be self-supporting at the first possible moment, is a sound principle of political economy; and we should be loth to interfere with its action in the case of University students; but we prefer to find that time and energy which are spent on private tuition devoted to the gaining of bursaries and scholarships; and, therefore, we should gladly see all such prizes thrown open to public contest, and a still greater number founded by patriotic testators.

Such are the main features of the proposed remedy. It will be seen that we keep in view the great excellence of our Scottish system—the admission of all, the professorial teaching of all, the thorough drill of all, and lastly, the adaptation of the teaching to all degrees of advancement; while, at the same time, we make provision for carrying higher in their studies that small aristocracy of talent who are able and willing to earn for themselves bays of a fresher green than now adorn the brows of the laureated few.

Were the scheme which we have sketched adopted, it would be necessary to render the Professors of Latin, Greek, Mathematics, and Natural Philosophy, some assistance in the discharge of the increased duties thus thrown upon them. The correcting of version exercises by the classical professors in their leisure hours we consider a useless waste of valuable time. That students should practise original composition is highly necessary, and that their efforts should be criticised by one of superior learning is also highly necessary; but one hour per week spent in open class in the criticism of a few exercises, varying in excellence, will accomplish more ultimate good than daily versions quietly returned to the writers with the amendments of the pencil. But composition in Latin and Greek must be made an integral part of all competitions, whether ordinary or bursary, before it be attended to with that zeal which it demands. When its importance has been publicly acknowledged by gaining prominence in examinations, then we shall secure its cultivation in private by all those to whom such an exercise is likely to prove of lasting service. In correcting exercises, therefore, the classical professors should require no help; and in drilling up incapables of the first year they should be equally free from obligation; but one or two thoroughly good scholars associated with each professor

would render immense service to the cause of learning, if their efforts were judiciously directed. The assistant professors should aid in the examinations, and should afford occasional relief to the professor in the lecture rooms; but one of their main duties should be to meet, say twice a-week, with the volunteers of each class, to go over minutely with them the ground which the professor is to pass rapidly in review on the day of his separate prelection. But we must not for a moment countenance the proposal that a professor should hand over to the almost entire charge of his deputy any one of the regular classes of the *polloi* course. If a professor's preparations be largely made in the summer recess, as they ought, his winter labours will be as light as those of professional men generally; for, according to our scheme, we should not employ him more than four hours per day in the work of public teaching. Let us on no account, however, abandon or curtail the functions of our time-honoured, character-moulding, and judgment-directing professoriate, but cling to it as a means of instruction, which, though producing few *learned* men, has yet sent forth a very large number of practically valuable members of society. Let our aim be to give to all the benefits of our present system, while to the few we afford, in addition, the means of being not only intellectually trained, but also deeply learned.

The assistant professors, or Fellows as they might be called, should be chosen from the most distinguished graduates; and he who had taken the highest degree in each department, should have the first offer of any vacancy in the tutorship connected with that department. The tenure of office should be limited, so that the benefits of the assistantship should be enjoyed as widely as possible.

The establishment of additional chairs is another of those reforms which have been urged with much importunity in the demand for extension. With this cry, so far as it applies to the Arts' curriculum, we cannot largely sympathise, though in the Faculties of Divinity and Law there is certainly room for increased power. What we mainly want, however, is that our present chairs be more vigorously worked by some such plan as we have already adverted to. The difficulty which lies in the way of additional chairs is of a practical kind,—where to get the students to support, or even *encourage*, the new incumbents, and how such students could afford the necessary leisure from more pressing calls. A Latham or a Craik in the chair of English Language and Literature, would, doubtless, be a great acquisition, for our philological wants are but too plainly perceptible; and though the pupils of our high schools and better academies might dispense with such a class, still the large majority of stu-

dents could not obtain, amidst the distractions of a country school, an adequate knowledge of this important department of learning. As an adjunct or supplement to the philological teaching of the classical professors, a dissection of our mother tongue would be in the highest degree desirable; and the advantages of a systematic study of our standard authors under a competent guide are too palpable to require enforcement. A thorough knowledge, however, of English literature is the labour of many years and the result of patient study. Lectures on Political and Social History might not inappropriately issue from the English Literature Chair; while the present absurd arrangement of imposing Natural History, in almost all its branches, on one pair of shoulders, might, with the greatest benefit to science, give way to the division of the subject into two departments.

A Professorship of Classical Literature, as supplementary to the present staff, would be rendered perfectly unnecessary by the system of "extra" which we have suggested; while a chair of Political Economy could be most advantageously combined with that of Ethics, a small additional endowment being provided to remunerate and encourage increased labour on the part of the professor. We can easily afford to ignore modern languages in the Arts' curriculum; if such a subject were made imperative, it would prove an incubus to the college and a burden to the students; if not, the chair would be well nigh a sinecure. Modern languages are equally well gained out of doors, and at a season when more urgent engagements do not interfere. There is one chair, however, the necessity for which is so strong, and the advantages so evident, that we can scarcely conceive how its claims have been overlooked in the many schemes of extension which have been broached, from time to time, we mean that of Pædautics, or the "Art and Science of Education." The Medical Faculty is, in all our colleges, more or less fully equipped for conveying both theoretical knowledge and practical experience; the doctrines, principles, and technicalities of divinity and law have, to some extent, received suitable expositors; but the Teaching Profession, though yielding to none of these in the influence which it exerts for the well being of society, has been completely ignored.¹ Teaching, in fact, is too generally viewed as incapable of being scientifically treated; and when spoken of, is regarded rather as an art, or "knack," than as a practical science reducible to rules. But a very little reflection will suffice to show, that this is a grand mistake, and that the want of such a chair in one or more of our colleges has been a most grievous omission.

¹ We rejoice to learn that a subscription has been auspiciously begun to endow such a chair in Edinburgh or Glasgow, and we wish the promoters of the scheme God speed. There should be two chairs of Pædautics in Scotland, one in Edinburgh or Glasgow, and the other in Aberdeen.

Mental Philosophy and the modes of mental culture are as evidently co-related as the principles of chemistry and the practice of agriculture, or as the doctrines of physiology and the application of curatives; and deduction is as legitimate in the one case as in the other. But experience and reflection are necessary to trace the connection of the parts and point out the bearing of one upon another. The diagnosis of mental peculiarities in the young is a matter of no small difficulty, and unless accurately made, the means used will be as powerless to the end, as the application of a mistaken drug to the removal of a disease. Hence hundreds of youths of respectable scholarship go forth from the Arts' course as teachers, who are lamentably unsuited for the arduous duties they have undertaken; and a most serious bar is thus presented to the improvement of our methods of tuition—and at the same time, the rights of the teaching body to be elevated to the rank of a distinct and recognised profession fail to be acknowledged. Without such a chair Normal Schools are but the strongholds of an unreasoning empiricism; but when attached to a lectureship of Pædautics, as a hospital to the Medical School, they may be made a most powerful engine for the improvement of education. Were our teachers compelled to graduate, attending for one year during their course the Professor of Pædautics, and practising in the Normal Schools, what an improvement would it be on the miserable system of apprentice teaching!

We would farther advocate, that a fixed course be prescribed for all aspirants to degrees, and that regular students be not permitted to use their discretion in selecting their classes from year to year. The practical inconveniences of this irregular method are very great, while theoretical objections to it will occur to all, based on psychological considerations, and on the mutual connection and coherence of the several subjects in their matter, and in their use as instruments of mental discipline.

Having thus discussed the arrangements of the undergraduate course, we conclude our survey by a few words on the conferring of laureate honours. A degree, at the conclusion of an academical career, is simply a token, that he upon whom it is conferred has attended college for a specified time, and has manifested moderate industry and respectable behaviour. It is not advisable, for many reasons, that the mere pass degree should exceed this limited amount of requirement, or that a separate form of diploma should exist for the graduates of different attainments. But it is of the utmost importance, that on the point of stepping from University scenes to the bustle of professional life, the industrious and accomplished students should have an opportunity of showing to the world what their diligence has been, what their powers are, and what confidence may be for the future placed in their abilities and application. A competition at graduation

is, therefore, imperatively called for, to act as a stimulus throughout the undergraduate course, and to afford students an opportunity of gaining for themselves a testimonial of the most unexceptionable kind. A pecuniary reward is not necessary to call forth prime talent, as the Cambridge wranglerships show; but as a First Wrangler is sure of a Fellowship from his college, so we might hold out to our highest graduates Assistantships, Travelling Bachelorships, or other valuable advantages. For the *polloi*, it is highly necessary that the whole weight of the degree examination should not rest on one effort, but that the trial be either distributed over the four years, as at Aberdeen,¹ or that it be divided into a "little go," at the end of the second year, and a "great go," at the end of the fourth. Besides this, however, let there be an extended course for graduation with honours, as the crowning struggle of the extra course; and here the admirable plan pursued in Glasgow may be taken as a model. All the subjects of the curriculum should be kept up till graduation, by one yearly examination on a prescribed text-book, after the student has ceased to attend lectures on that branch; and thus time would ultimately be saved, as it is much easier to keep up knowledge by doing a little, than to recall it after an interval. That something must be done, and that speedily, to increase the respectability of our degrees, is admitted on all hands; and to discover the best means of effecting this object, we must seek the causes which have led to their depreciation. These we conceive to be as follows:—1st, It has been well known in England and Ireland, that students may enter the Scottish colleges at a very early age, and with almost no preparation; and that ten months at Latin, ten at Greek, and ten at mathematics, are sufficient for the degree of A.M., while three or four years' study of each of these departments, after a lengthened preparatory training, secures for English and Irish students only the designation of A.B., the higher title of A.M. not being procurable for three years longer. 2d, The value of our degrees is not known, either at home or abroad, since the papers by which candidates are tested are never seen beyond the college walls. Were the papers published to the world, as in Oxford, Cambridge, and Dublin, our professors might then afford to test the qualifications of their own pupils without being subject to the inuendos of unreflecting agitators. 3d, The practice of selling degrees, once so largely prevalent, has had the effect of depreciating our honours, perhaps more than any other individual cause. The opinion which, in this country, we entertain of German Ph.D.'s conferred on

¹ This lightening of the degree examination has the effect of increasing the number of graduates, for as the toll comes in eight instalments, two each year, the *pass* is a matter of no great difficulty. There are many evident drawbacks, however, to the Aberdeen plan, though we consider it the best in Scotland.

Englishmen, will afford some estimate of what effect the indiscriminate sale of Scottish degrees has had on the foreign value of these distinctions. To restore our respectability in this respect, we must make our higher degrees a *bona fide* test of superior scholarship, not only by a final effort, but by a sustained struggle and extra reading throughout the whole course; we must publish our examination papers to the world; and we must abandon the degrading and humiliating practice of lavishing degrees on aliens, and selling the birthright of our sons for a mess of pottage. At the end of the course, no degree above A.B. should be conferred—A.M., and those of higher rank being obtainable by time and by an examination merely formal; no degree should be conferred by a college, except on her own alumni (we, of course allow L.L.D.'s to princes and warriors): and no degree should be conferred on an absent individual. If these simple rules be observed, our degrees will soon be at a premium in the literary exchange, and will be greedily sought after as passports to honour and emolument.

We have thus sketched a plan for the improvement and extension of our colleges; and in so doing, have endeavoured to preserve intact our characteristic excellences, and to recommend modifications of present appliances rather than to advocate foreign innovations. An entrance course for Greek and Latin is a mere extension of the principle which, tacitly acted on by all, insures a moderate amount of Latin reading before matriculation; periodical examinations at the beginning and the end of each session are already held, and that with the best results, in Aberdeen. An extra course, with extra prizes and competitions, is a mere enlargement of the system of "Private Studies," as encouraged by some professors; assistant professors have for some time been employed in various classes, and we only seek to direct their efforts to greater advantage; additional chairs are called for by all, and so far, are a most reasonable *extension*; a fixed course is the rule in some of our colleges; and, lastly, competition for high degrees has long been the practice in Edinburgh and Glasgow, and more recently in King's College, Aberdeen. On the other hand, while maintaining similarity in outward forms, we have not sought to suggest alterations in the modes of teaching, for we advocate the maintenance in full, nay, increased force, of the rigid drill and moulding discipline of the professorial apparatus. We have, moreover, indicated a plan whereby the majority of the entrants may be so tested, as that higher classical attainments shall be secured on admission to the university, and the schools of the country reflexively raised; while we have nevertheless shown, that none need be excluded, and that the *seri-studiorum* and mere amateurs may have their feelings spared and their literary cravings satisfied without serious detriment to the cause of learning.

- ART. V.—1. *The Physical Geography of the Sea.* By M. F. MAURY, LL.D., U. S. N., Superintendent of the National Observatory. An entirely New Edition (6th), with Addenda. New York, 1857. With 13 Plates, pp. 384.
2. *Maury's Sailing Directions.* 7th Edition. February 1857. Pp. 870.
3. *Report of the Meteorological Department of the Board of Trade,* 1857.
4. *First and Second Reports of the Liverpool Compass Committee to the Board of Trade, with Letters from the ASTRONOMER ROYAL thereupon.* London, 1857.
5. *Instructions for Correcting the Deviation of the Compass.* Edited by ARCHIBALD SMITH, Esq., M.A., F.R.S., late Fellow of Trinity College, Cambridge. London 1857.
6. *Swinging Ships for Deviation.* London, 1857.
7. *Weather Book; Abstract of Log and Meteorological Register.* Issued by the Board of Trade.
8. *First Number of Meteorological Papers.* Published by Authority of the Board of Trade. London, 1857.
9. *Wind Charts.* Published by the Board of Trade.
10. *Great Circle Sailing.* Published by the Board of Trade.
11. *The Principles of Great Circle and Composite Sailing.* By JOHN THOMAS TOWSON. Printed for Private Circulation. Liverpool, 1857.
12. *Translation of Dutch Pamphlets on the Herring Fishery.* London, 1858.
13. *Meteorological Register kept by the EARL OF GIFFORD, in his Yacht "Fair Rosamond," in 1857.* London, 1857. Issued by the Board of Trade.
14. *The Log of a Merchant Officer viewed with reference to the Education of Young Officers, and the Youth of the Merchant Service.* By ROBERT METHVEN, Commander in the Peninsular and Oriental Company. London, 1854.

"THE GEOGRAPHY OF THE SEA."¹—What an incongruous idea do these words present to the scholar! How thoroughly incomprehensible by the ordinary mind! Considering the ocean as but the great reservoir for receiving the superfluous waters of the earth, as the nursery of the whale and its congeners, or as the dreaded grave of the seafaring man, we

¹ Humboldt has given this name to what he justly regards as a new department of science.

have seldom regarded it under its nobler phase, as the common highway of nations, which even despotism cannot appropriate, and as an essential part of the complex terraqueous apparatus which constitutes "The Life of the Earth."

From the earliest times, before the sailor trusted himself to the open sea, a certain degree of knowledge of the tides and the winds was required for the safe navigation of his shores; but when he adventured across the Atlantic, or into the bosom of the Indian and Pacific Oceans, or attempted to circumnavigate the globe, and reach its ice-bound poles, seamanship more advanced, and science more profound, were required. The currents in the atmosphere, the trade winds and monsoons, the belts of calm, tropical and equatorial, the hurricanes and tornadoes of the torrid zone, the thunder storms, and the air and waterspouts of southern climates, perpetually distract the mariner in his course, and demand from him all the skill which can be derived from science and experience. Nor are the currents of the ocean less amenable to inquiry, and less formidable to the seaman than those of the atmosphere. The two Gulf Streams of the Northern and Southern Hemispheres, the currents from the Poles to the Equator, and from the Equator to the Poles, and the bores and tidal waves of the East, perform important functions in our terraqueous world, and are only now revealing to science their origin and their laws.

The study, therefore, of the sea, of its geography, its movements, and its physical condition, while it presents to the general reader topics at once popular and instructive, affords to the philosopher a rich and boundless field of research, and must eventually promote the highest interests of humanity and civilization. As a new department of science, it has already excited the notice of every nation in the Old and New World; and societies and governments are actively employed in promoting the various inquiries which it demands, in order to shorten the voyages to distant lands, to guard life and property which are risked at sea, and to advance those branches of knowledge which are associated with winds and waves, and embrace that profusion of life of which the sea is the nursery and the grave. A brief history, therefore, of what has already been accomplished in this great enterprise, may be useful to some of our readers, and we trust may be made interesting and instructive to all.

It would be a difficult task, and one not necessary to our present purpose, to give an account of the delays and dangers to which the navigator is exposed in those remote seas which have been comparatively little visited by European or transatlantic communities. It will be sufficient to refer to the Atlantic Ocean, the great common of civilisation, which is

covered, at every season of the year, with thousands of vessels, intercarrying the produce of the old and new worlds, and freighted with so many precious lives. The grand and peculiar feature of the Atlantic is the GULF STREAM, which till recently has been regarded by the seaman as a serious obstruction in his course. Ignorant of its strength and limits, his vessel was often drifted many miles out of its course, and the length of his voyage greatly extended.¹ Before the high temperature of this current was ascertained, a voyage from Europe to New England and New York, and even so far south as Cape Chesapeak, was both difficult and dangerous. In approaching the American coast, vessels were beset with snow storms and gales, which baffled the strength and skill of the seaman. His bark became a mass of ice, her crew frosted and helpless, and "she remained obedient only to her helm, and was kept away for the Gulf Stream." On reaching its edge, she passed from a wintry sea into one at summer heat. The ice disappeared from the ship, and "the sailor bathed his stiffened limbs in the tepid waters of the stream;" but in attempting again to "make his port," he is driven back from the north-west, and exposed to the dangers which he had surmounted. In gales of this kind many ships annually founder; and there are numerous instances in which vessels, with their crews enervated in tropical climates, have encountered, near the capes of Virginia, snow storms which have driven them back, again and again, into the Gulf Stream, and prevented them from making an anchorage, for fifty or sixty days. In mid-winter, the number of wrecks and the loss of life, along the Atlantic sea front, was frightful. Sometimes, in the month's average, the wrecks amounted to three a day; and vessels which escaped this calamity, were blown off and obliged to take refuge in the West Indies, where they remained till spring, before they could venture to approach the inhospitable coast.

The Gulf Stream, to which these calamities were due, has, by the agency of science, become a boon to navigation. In 1770, when Dr Franklin was in London, he learned the curious fact, that the Falmouth packets to Boston arrived a fortnight later than the trading vessels from London to Rhode Island, although the distance was much less. Captain Folger, a Nantucket whaler, then in London, explained to the Doctor this singular anomaly. The Rhode Island captain was acquainted with the high temperature and great velocity of the Gulf Stream, and turned it to account, not only as a refuge from the snow-storms, and as a land-mark or beacon for the

¹ In his passage a few years ago from Sierra Leone to New York, General Sabine was drifted 1600 miles off his way by the force of currents alone.

coast in all weathers, but as a means of shortening their voyage. The English captains, ignorant of the properties of the current, kept their ships in it, and were set back sixty or seventy miles a day. Dr Franklin viewed the discovery of the high temperature of the Gulf Stream as of such importance that he ungenerously, we think, kept it a secret, as if it was a solution of the great problem of finding the longitude at sea, for which a reward, similar to that given to Harrison, might be claimed.¹ Vessels having often been 5° and even 10° out of their reckoning, it was naturally thought to be a solution of the problem of the longitude, "for, on approaching the coast," as our author observes, "the current of warm water in the Gulf Stream, and of cold water on this side of it, if tried with the thermometer, would enable the mariner to judge with great certainty, and in the event of hazy weather, as to his position." Although this important discovery was made in 1775, it was not generally made known till 1790, when Dr Franklin published his work on *Thermometrical Navigation*. Its beneficial employment in navigation was immediate. The northern ports of America were as accessible in winter as in summer; and there seems to be no doubt that it was then the cause of the great decline which took place in the trade of the two Carolinas, "Charlestown, the great southern emporium of that day, being removed from its position as a half-way house, and placed in the category of an outside station."

In consequence of the great boon obtained for navigation by the study of the Gulf Stream, Lieutenant Maury, a distinguished officer in the United States navy, was led to collect from the captains of the mercantile marine all the facts which they had observed respecting the winds, tides, currents, and temperature of the ocean. After a careful examination of them, he published the results at which he arrived, in his volume, entitled, "The Wind and Current Charts," a work which has, to an extraordinary extent, shortened and rendered safe voyages that had always been long and perilous. By the use of his charts and sailing directions, the average passage from England to Australia has been reduced from 125 to 97 days, the homeward passage having been once made in 63 days! The passage from New York to California has, in like manner, been reduced from 183 to 135 days. The benefits thus conferred on every maritime nation were so obvious, that their respective governments, at the desire of Lieutenant Maury, were induced to take an interest in

¹ Mr Maury says that Dr Franklin concealed his discovery for a while "through political considerations;" but his observations on the longitude problem indicates clearly that the motives of the Doctor must have been of a personal kind, for no consideration could be called political which withheld from the American navigator the means of saving himself from shipwreck, and from the American merchant the rapid and safe conveyance of his property.

the subject, and to send qualified persons to discuss it at a general conference. Representatives from England, France, Russia, Sweden, Norway, Holland, Denmark, Belgium, Portugal, and the United States, accordingly met in Brussels on the 23d August 1853, and adopted a system of observations to be made on board all their vessels. Spain, Prussia, Sardinia, the Holy See, Austria, Brazil, the republics of Bremen and Chili, and the free city of Hamburg, subsequently offered their co-operation in the same plan; and the sea is now crowded with observers, who will carry on their researches in war as well as in peace. In the event of any of these vessels being captured by an enemy, it has been arranged that the journal containing the observations, shall be held sacred; and we trust that this union of nations to promote the common interests of humanity and commerce may lead to a more glorious combination to cultivate only the arts of peace. In reducing to law the elements which disturb the ocean, and in subjugating the rebellious powers which are so fatally at play in the physical world, there is work enough to exhaust all the resources of the state, and to call forth all the skill and heroism of its servants. In this peaceful strife, where conquests more valuable than kingdoms, are the prize, the command to love our neighbour is never broken, and fame, the reward of victory, is as enduring as time and as noble as virtue.

After the Report of the Brussels Conference had been laid before Parliament, a grant of money was made for the purchase of instruments, and the discussion of observations, and a department of the Board of Trade, under Rear-Admiral Fitzroy, was charged with the important task of carrying into effect the contemplated arrangements. In order to assist the officers of the navy and the ship-masters who may agree to co-operate in this great work, forms of abstract logs have been prepared for men-of-war and merchantmen; and those who shall keep a journal of observations and results, and send an abstract of it to the National Observatory at Washington, will be furnished, free of cost, with a copy of Lieutenant Maury's Sailing Directions, and such sheets of the chart as relate to the cruising ground of the co-operator. The American shipmasters entered warmly into these views; and in a short time the captains of more than a thousand floating observatories, were engaged day and night, in every part of the ocean, in making and recording their observations. Since the meeting of the Brussels Conference, it has been proposed to extend this system of observations to the land, and thus to obtain from every inhabited part of the globe, a series of simultaneous observations on the weather, which cannot fail to advance the agricultural and sanitary interests of nations.

Our readers will understand from these details how Lieutenant

Maury was led to compose his treatise on the Physical Geography of the Sea,—a work of European importance, and one which cannot fail to interest and to instruct every class of readers.

After giving a description of the Gulf Stream, one of the most remarkable phenomena in the ocean, he treats, in eighteen chapters, of the influence of this great current on the climates of the north of Europe and America; of the atmosphere, with its storms, its land and sea breezes, its winds, and their geological agency; the relation between the circulation of the atmosphere and magnetism; the currents, salts, and depths of the ocean; the equatorial cloud-ring and colour belts; the red fogs and sea-cloud; the climates of the ocean; the drift of the sea; the routes across it; the basins of the Atlantic; and the open sea in the Arctic regions.

The Gulf Stream is a river in the ocean, which never overflows in the mightiest floods, and is never dried up in the severest droughts. Its current consists of warm, and its banks and bottom of cold, water. It has its origin in the Gulf of Mexico, and its embouchure in the Arctic Seas. Though a thousand times greater in volume, it flows with a velocity greater than the Mississippi or the Amazon. The colour of the stream is indigo blue;¹ and so definite is its line of junction with the common sea-water, that one-half of a ship may be in blue, and the other in colourless, water.

The cause of the Gulf Stream has long been a problem among hydrographers; and even with all the light that Lieutenant Maury has thrown upon it, we can hardly consider it as solved. Dr Franklin was of opinion that the Gulf Stream is the escaping of the waters that are constantly forced into the Caribbean Sea by the trade winds; and that the water thus pressed up, as it were, into a head, gives the current its velocity. While Lieutenant Maury admits it as a fact, that the trade winds skim the Atlantic of the water that has supplied them with vapour, and thus drive a salter current into the Caribbean Sea; he regards the causes as unknown why it escapes by the channel of the Gulf Stream in preference to any other. In addition to the action of the trade winds, he conceives that there are two causes in operation which may explain the Gulf Stream,—one the increased saltiness of the water driven into the Caribbean

¹ As the Gulf Stream contains 4 per cent. of salt, a larger quantity than common sea water, Lieutenant Maury is of opinion that its indigo blue colour is owing to this cause. The same observer, however, who measured the saltiness of the Gulf Stream, found that there was $4\frac{1}{2}$ per cent. of salt in the sea of the trade wind regions; but we are not told that the *blue* colour is there more rich and intense. We believe that blue is the colour of *pure water*, and is not produced by the salt which it contains. The green colour of other seas arises from the yellow produced by vegetable matter. There is no more salt, if any at all, in the blue Rhone, than in the green waters of the Rhine.

Sea, and the other the small quantity of salt in the Baltic and Northern Seas. The heavy, or saltier water, will therefore flow into the region where it is fresher and lighter. But the temperature of the Gulf Stream is often 20° and even 30° higher than that of the ocean; and as water expands with heat, the difference of weight produced by difference of saltiness may be thus more than compensated, and the waters of the Gulf Stream be lighter than those of the ocean. If lighter, then they must occupy a higher level than the waters through which they flow; assuming the shape of a roof, or a double inclined plane, from which water will run down on either side,—cold water running in at the bottom, raising up the cold water bed of the Gulf Stream, and making it shallower in its progress northward. That this is the constitution of this remarkable current, has been placed beyond a doubt. Boats in or near the centre, or axis, of the stream, invariably drift to one side or other. Sea-weed (*Jucus natans*) and drift-wood appear in large quantities on the *outer* edge of the stream. Very little sea-weed and drift-wood is found on the eastern edge of it; and its accumulation on its western edge, is ascribed by our author to the diurnal rotation of the earth.

In its course northward, the Gulf Stream tends more and more to the east, till, at the banks of Newfoundland, it is almost easterly. Its warm waters here melt the icebergs from the Arctic seas, which deposit the rocks, the earth, and the gravel which they bore, thus forming banks at the bottom of the ocean. From this locality the stream flows, in a state of increasing expansion, to the British Islands, to the North Sea, and the Frozen Ocean, passing along the east and west coasts of Greenland, and modifying, perhaps to some small extent, the climate of these inhospitable regions. When the Gulf Stream leaves the United States, it varies its position with the seasons; its northern limit, as it passes the south-east extremity of Newfoundland, being in lat. $40^{\circ} 30'$ in winter, and in lat. $45^{\circ} 30'$ in September, when the sea is hottest. This oscillatory motion arises from the unequal density of the waters on each side of it—at one time pressed to the right, and at another to the left, according to the seasons of the year, and the consequent changes of temperature in the sea.

The great mass of water which constitutes the Gulf Stream, has a variety of temperatures. The hottest portion is at or near the surface, the heat diminishing downwards to the bottom of the current,¹ which never reaches the bottom, there being always a curtain of cool water between the stream and the solid earth beneath. The object of this arrangement, according to Lieutenant

¹ The temperature of the surface water at Cape Hatteras, in N. lat. $35^{\circ} 15'$, and W. long. $75^{\circ} 30'$, is about 80° , and 57° at the depth of 3000 feet.

Maury, is to carry the stream warm to France, Great Britain, and the West of Europe, by making it pass over the non-conducting cold water at the bottom. Had the stream rushed over the solid crust of the earth, which is comparatively a good conductor, it would have lost much of its heat before it reached the West of Europe, and, we may add, it would have been greatly obstructed in its motion. We can hardly agree with our author, when he says, "that, but for this arrangement, the soft climates of both France and England would be as that of Labrador, severe in the extreme, and icebound."

But it is not merely in its vertical direction that the temperature of the Gulf Stream varies. The heat of the current will of course diminish from its middle to its edges, but we were not prepared to expect that it consisted of threads of warm, alternating with threads of colder water; so that, in sailing across it from America, there is "a remarkable series of thermometrical elevations and depressions on the surface temperature of this mighty river in the sea."

In treating of the influence of the Gulf Stream upon climates, our author regards it as a portion of a great heating apparatus, similar to the hot water apparatus which is used for heating our dwellings: the Torrid Zone is the furnace, the Mexican Gulf and the Caribbean Sea the cauldrons, the Gulf Stream the conducting pipe. "From the banks of Newfoundland to the shores of Europe is the basement—the hot air chamber in which this pipe is flared out, so as to present a large cooling surface. Here the circulation of the atmosphere is arranged by nature; and it is such, that the warmth thus conveyed into this warm air chamber of mid-ocean is taken up by the genial west winds, and dispersed, in the most benign manner, throughout Great Britain and the West of Europe." In support of these views, our author informs us, that the maximum temperature of the Gulf Stream is 86° , or about 9° above the ocean temperature; that it loses 2° by an increase of 10° of latitude; and that, after running 3000 miles northward, it still preserves, in winter, the heat of summer, and in this state crosses the 40° of north latitude. Here it overflows its liquid banks, and spreads itself for thousands of square leagues, over the cold waters around—"covering the ocean with a mantle of warmth," and carrying with it a mild and moist atmosphere, which mitigates in Europe the rigours of winter, and extends its genial influence even into the polar basin of Spitzbergen. Ireland, says Lieutenant Maury, is thus made the "Emerald Isle of the Sea," and the shores of Britain clothed with evergreen robes, while, in the same latitude, Labrador is fast bound in ice.

But while the Gulf Stream is thus generous to the North of

Europe, its beneficial influences are felt in the South. The cold waters from the North descend towards the Equator, and moderate the burning climates in the Caribbean Sea, and round the Gulf of Mexico. These cold currents bring along with them the fish of the northern seas, and thus give the inhabitants of the South a supply of fish far superior to that which is bred in their heated waters. The fish of warm climates, though beautiful and gorgeous in their colours, are soft and unfit for table; while in the current of cold water in the Pacific, called *Humboldt's Current*, which sweeps the shores of Chili, Peru, and Columbia, and reaches even the Gallipagos Islands, under the Line, there is throughout the whole of that distance an abundant supply of excellent fish. These cold and warm currents, therefore, are the great highways through which fishes travel from one region to another. The whale, it is well known, cannot exist in warm waters; but the medusæ, or sea nettles, its principal food, are bred in the warm seas of the South. From the Gulf of Mexico, the great nursery of these medusæ, the Gulf Stream carries them in shoals for thousands of miles, to feed the starving whale in its own gelid waters.¹

One of the most remarkable properties of the Gulf Stream, is the influence which it exercises over the meteorology of the ocean. The most furious gales sweep along with it; and it is doubtless the cause of the fogs of Newfoundland, which are so dangerous to navigation in winter. Many gales have been traced to the Gulf Stream from their origin; and gales which rise on the coast of Africa, as far south as 10° or 15° of N. latitude, have been known to join it, and to travel with it, turning round to recross the Atlantic for the shores of Europe. Gales thus attracted to the Gulf Stream are the most terrific on the ocean, and their course is marked by the most serious disasters. In 1854 upwards of seventy vessels were wrecked, dismasted, or damaged, in one of these tornadoes; the current of the stream running in one direction, and the wind blowing in another, so as to create a sea of the most frightful kind. These storms are said to be, for the most part, rotatory ones, such as have been described by Piddington, Redfield, and Reid; but it is a question still to be settled, why these storms are attracted towards the Gulf Stream, and follow it in its course.

We have thus seen, under the guidance of our distinguished author, how the equatorial winds convey the heat over the waters of the tropics into the Northern Hemisphere, raising the tem-

¹ Off the coast of Florida, shoals of young medusæ have been seen, thickly covering the sea for many leagues. A sea captain, bound to England, was five or six days in sailing through them. On his return, sixty days afterwards, he encountered the same shoal, and was three or four days in passing through it.

perature of the Atlantic, warming even the Arctic Seas, and therefore necessarily improving, to some extent, the climate of the West of Europe. We cannot, however, agree with Lieutenant Maury in regarding the Gulf Stream as the sole, or even the principal, cause of the temperature which characterises the warm meridian that passes through the West of Europe. In a former article,¹ relative to the distribution of heat over the globe, we have shown that there are in the Northern Hemisphere *two* poles of maximum cold—one in Canada, and another in Siberia; *two* meridians of maximum cold, passing nearly through the cold poles; and *two* of maximum heat, nearly at right angles to them. We have shown, also, that the two magnetic poles are nearly coincident with the poles of maximum cold; and we are therefore led to regard the earth as a great thermo-magnetic apparatus, in which the distribution of its temperature is regulated by internal or external causes, depending upon magnetic, galvanic, or chemical agencies. The difference between the temperatures in the same latitudes (13° in the lat. of 50° , and 17° in the lat. of 60°) on the cold and warm meridians, is too great to be produced by any genial currents in the ocean; and we can hardly conceive how even a much higher temperature than that of the Gulf Stream could, after its enormous diminution by the eastern expansion of the current, affect even the Northern Ocean to any marked extent. That it should affect the inland climates of the West of Europe, appears to us still more problematical. The variation of temperature in the warm European meridian, as the cosine of the latitude, indicates a cause of a more general nature than the intrusion of an oceanic current; and when we consider that this law is indicated also by the temperature of the earth,—of springs deeply-seated, and beyond the influence of superficial agencies,—we feel that we are not presumptuous in questioning the opinion, that the Gulf Stream, though it may influence, does not regulate the climate of the Northern Hemisphere.

With the physical geography of the sea, the atmosphere of the earth has a necessary and an interesting connection. What the moon is to the tides, the atmosphere is to the ocean. We must study the character and condition of the one, in order to understand the motions and laws of the other. The air which surrounds the earth extends at least to the distance of fifty miles, growing thinner and thinner as it recedes. At the top of the highest mountains, it is scarcely sufficient to sustain life and to propagate sound. Though it presses upon every square inch of our bodies, we do not feel its influence. When at rest, we are sensible only to its heat or its cold. The aspen leaf rests on its

¹ See Review of Humboldt's *Central Asia*, in vol. v., p. 491-503.

stalk, and the spider's line glitters with the varied tints of the sun. The silence of death is broken only by the hum of life. Over this trance of nature a change speedily supervenes. The distant forest announces the approach of the tempest,—the oak and the pine are crushed by its power; the proudest monuments of human skill are levelled with the dust; and the slumbering ocean, chafed into fury, dashes the war-ship against its cliffs, or sinks it beneath its waves. Resting upon the stream, and lake, and sea, the porous air sucks up their waters in vapour, forms with it the fleecy or the watery cloud, and retains its precious charge till its service is demanded in rain or in dew, in hail or in snow. As the pabulum of life, the air of the atmosphere exercises still higher functions. It is the food of whatever breathes, the fuel of whatever burns, the essence of whatever grows, the spirit of whatever dies,—the soul, in short, of matter—its element when it exists, its residuum when it decays. It is only, however, in its relation to the geography of the sea, that we can treat of the functions of the atmosphere.

Between the parallels of latitude 30° N. and 30° S. of the equator, winds, called the *Trade Winds*, blow almost unceasingly. Those on the north of the equator blow from the north-east to the south-west; and those to the south of the equator from the south-east to the north-west. In their motions, the trade winds are as steady and constant as the current of a great river, always moving in the same direction, unless when they are occasionally turned aside by a desert to blow in *Monsoons*, or as *land* and *sea breezes*. The northern edge of the north-east trade winds is variable. In spring they are so near the equator, that they sometimes reach only to the parallel of 15° . As these two master currents of air are continually blowing from the poles to the equator, it necessarily follows that the air thus taken from the poles must be replaced by other air from the equator. This return current must, therefore, blow in the upper regions of the atmosphere, and opposite to the wind which it replaces. Had the earth been at rest, these winds—the *trade* and their return currents—would have moved from north to south, and from south to north; but in consequence of the rotation of the earth from west to east, both the direct and counter currents move in a direction intermediate between the two motions to which they are subject—namely, in south-easterly and south-westerly, and in north-easterly and north-westerly, directions. When the north-east trade winds meet the south-east ones at the equator, they produce a calm, thus forming the *belt of Equatorial calms*. In like manner, when the direct and return currents from the poles reach the parallel of 30° , they produce a belt of calms, which in the Northern Hemisphere are

called the *calms of Cancer*; and in the Southern the *calms of Capricorn*. The breadth of the calms of Cancer, and also their limits, is variable. According to the season of the year, they oscillate between the parallels of 17° and 38° north.

Among the meteorological agencies of the atmosphere, its two greatest functions, according to Lieutenant Maury, are to distribute moisture over the surface of the earth, and to temper the climate of different latitudes. Having travelled obliquely over a large space of the ocean, the north-east and south-east trade winds are heavily laden with moisture when they meet in the belt of equatorial calms. The two currents being thus brought into collision, the air rises upwards, and expanding and cooling as it ascends, a portion of its vapour, thus condensed, descends in rains, which are sometimes so heavy and so constant, that, to use the language of old sailors, they "have scooped up fresh water from the surface of the sea." The waters thus taken up in vapour and precipitated during the collision of aerial currents, and the cold which accompanies them, supplies the great rivers of the world, which conduct them to the sea, to be again raised by the winds and breezes which blow upon its surface. As the great mass of the ocean lies in the Southern Hemisphere, it is a curious fact that the greatest quantity of rains, indicated by its rivers, falls in the Northern Hemisphere. In the Northern temperate zone, the annual fall of rain is "half as much again" as that in the South temperate zone;¹ and it is well known² that the great water courses of the globe, and half the fresh water, is in the Northern Hemisphere.

In explaining this remarkable fact, Lieutenant Maury states that, in the late part of the autumn, winter, and early spring of the North, the sun is throwing an intense heat upon the seas of the Southern Hemisphere, and therefore raising a mass of vapour into the upper regions of the atmosphere, from which it is carried in an upper current by the south-east trade winds, and set free by condensation in our northern winter. When this upper current reaches the calms of Cancer, it becomes the surface wind from the southward and westward, and, cooling as it goes north, the process of its condensation begins. Hence our author concludes that our rivers are supplied with their waters principally from the trade wind regions, and that this is the reason why the sea water in those regions contains more salt than elsewhere.³

¹ According to Johnston's *Physical Atlas*, the annual average in the North is 36 inches, and only 26 in the South temperate zone.

² Lieutenant Maury has employed these views in determining the regions where no rain falls, those where it should be a maximum, and those where the climate should be the most equable. The rainless regions are on the coast of Peru, and about the Red Sea, and the Western Coasts of Mexico; and the Deserts of Africa, Asia, North America, and Australia, are almost rainless. The regions

The rivers of the Southern Hemisphere, for similar reasons, are supplied with their waters by the north-east trade winds; but as the evaporating surface—that is, the area of sea over which they blow—contains, between the parallels of 7° and 29° north, only 25,000,000 of square miles, while the evaporating surface in the Southern Hemisphere is 75,000,000, the quantity of rain which falls in the latter is comparatively small. The mean annual fall of rain, which is evaporated principally from the seas of the Torrid Zone, is estimated at about *five* feet. If we suppose it all to come from that zone, it would be equivalent to the waters of a lake 24,000 miles long, 3000 miles broad, and 16 feet deep! and this water is annually raised up into the sky, and brought down again by the exquisite, though complex, machinery of the atmosphere, “which never wears out nor breaks down, nor fails to do its work at the right time and in the right way.”

In contemplating these wonderful arrangements, we see why the earth is round—why its mass and force of gravity is neither greater nor less than it is—why the proportion between the land and water is as we find it—why the existing capacity of the atmosphere for moisture has been adopted—and why the mountain ranges have their present height, and breadth, and form, and position. To understand these arrangements, or if beyond our capacity, to be convinced of their existence, is a privilege of no ordinary kind. If there is any part of the economy of the material world which seems to be inexplicable and without law, it is the weather, with its capricious changes and its ever varying and mysterious phenomena. Delayed with calms, or baffled with contrary winds—tossed upon a tempestuous sea, or dashed upon the cliffs of the ocean—deluged with a waterspout, or upset by an iceberg—lost in a fog, or struck by the lightning, the seafaring man can hardly believe that he is suffering under a system of beneficial adaptations necessary for his happiness and even his existence. Nor is the landsman less sceptical when he is personally thwarted in his plans—when his crops are inundated or levelled with the ground—his forests shattered or uprooted—his tender frame fevered with heat or with cold—and the circle

of greatest rains are the abrupt slopes of those mountains which the trade winds first strike after having blown over the greatest area of the ocean. They occur in Patagonia and to the north of Oregon. The regions of equable climates are under the Equatorial calms, “where the N.E. and S.E. trade winds meet fresh from the ocean, and keep the temperature uniform under a canopy of perpetual clouds.” Our author also explains why there is more rain on one side of a mountain than on the other. The Andes, for example, and other mountains which lie athwart the course of the winds, have a dry and a rainy side, the prevailing winds determining which is the rainy and which is the dry side—the weather side, or that on which the wind blows, being the wet, and the lee side the dry one.

which he loves smitten with famine or with pestilence. And yet he ought to know, and, if he does not know, he ought to learn, that these apparent evils are the workings of that complex machine, with its pinions of heat and air and water, which feeds and sustains every living thing in the animal and vegetable world. But though it is not difficult to comprehend this general truth, the philosopher is only beginning to understand some of the simpler processes which are under our daily observation; and we can hardly congratulate him on having discovered a single law which regulates the weather. While the astronomer, with his timepiece and his telescope, can predict and exhibit phenomena in the heavens invisible to the human eye, the most weather-wise sage, even with the barometer and thermometer in his hand, and the wind-gage in his view, dare not, without presumption, anticipate an hour of sunshine or a day of rain.

In his fourth chapter, Lieut. Maury treats of land and sea breezes, those alternating winds which proceed from the sea by day, and from the land by night. These breezes have their origin in the heating of the land by day, and its cooling by the radiation of its acquired heat during the night, though they are occasionally affected by other causes. Lieut. Jansen,¹ of the Dutch Navy, whose observations, couched in language too poetical for science, constitute the principal part of the chapter, is of opinion that electricity, rain, and other causes, have an influence on the regularity of the land breezes; and he goes so far as to conjecture, from very insufficient data, that the moon is also an agent, there being, as he avers, in several localities little land breeze at full moon, and little sea breeze at new moon.

Among the means of investigating the phenomena of the trade winds, our readers will hardly believe that the microscope has been highly instrumental. In several localities, showers of dust of a brick-red or cinnamon colour are precipitated in such quantities, as to cover the sails and riggings of vessels hundreds of miles from the land. These showers produce what the seaman calls "red fogs," or "sirocco," or "African dust," and they have enabled the meteorologist to establish as a fact, what had previously been the result of theory, that the north-east and south-east trade winds, after meeting and rising up in the Equatorial calms, take their observed paths, the south-east trades passing over into the Northern Hemisphere, and the north-east trades into the Southern Hemisphere. By examining the "sirocco or African dust," Ehrenberg found it to consist of infusorial animalcules, and organisms whose *habitat* is not Africa but the south-east trade wind region of South America. In the strikingly

¹ Jansen's Appendix to Lieut. Maury's *Physical Geography of the Sea*, translated from the Dutch by Mrs Dr Breed of Washington.

similar specimens from the Cape de Verd Islands, Malta, Genoa, Lyons, and the Tyrol, he recognised South American forms; so that they must have been carried by a perpetual upper current of air from South America to North Africa. The rain-dust, which, according to Humboldt, imparts a straw colour to the atmosphere, is of a brick-red or yellow-ochre colour when collected in parcels. It falls most frequently in spring or autumn, generally from thirty to sixty days after the equinoxes; and, in order to explain this, Ehrenberg supposes that "a dust-cloud is held constantly swimming in the atmosphere by continuous currents of air, and that it lies in the region of the trade winds, and suffers partial and periodical deviations." As this dust is probably taken up in the dry and not in the wet season, Lieut. Maury is disposed to believe that it comes from one place in the vernal, and from another in the autumnal equinox.

When the opposite trade winds meet in the Equatorial calms and rise up together, Lieut. Maury asks an important question. What makes them cross? What is the power which guides the northern trade to the south, and the southern to the north? And he proceeds to answer it in his *sixth* chapter, "On the probable relation between magnetism and the circulation of the atmosphere." The theory which our author here expounds is founded on the fine discovery of Dr Faraday, that oxygen gas, which forms one-fifth part of the atmosphere, is magnetic; that its magnetic force is diminished with heat, and that the atmosphere is a magnetic medium ever varying in its magnetic power by the influence of natural circumstances. From theory, and some observations by Passy and Bellot, he conceives that the atmospherical nodes, or calm regions, or poles of the wind,¹ are coincident with the north and south magnetic poles, and also with the poles of maximum cold discovered by Sir David Brewster;² and he considers that there is such a physical connection among these three poles as to indicate a corresponding relation between magnetism and the circulation of the atmosphere. "So wide," says he, "is the field of speculation presented by these discoveries, that we may, in some respects, regard this great globe itself, with its 'cusps,' and spiral wires of air, earth, and water, as an immense pile and helix, which being excited by the natural batteries in the sea and atmosphere of the tropics, excites in turn its oxygen, and imparts to atmospherical matter

¹ Professor Coffin has been led, by numerous observations, to place his "meteorological pole," or pole of the winds, in Lat. 104° North and Long. 103° West, coinciding nearly with the pole of maximum cold. See *Smithsonian Contributions to Knowledge*, vol. vi., p. 854.

² See *Edinburgh Encyclopædia*, Art. "Polar Regions," by Dr Scoresby, vol. xvii., p. 15; and *Encyclopædia Britannica*, Seventh Edition, Art. "Magnetism," vol. xiii., p. 695.

the properties of magnetism." "With these lights," he continues, "we see *why air, which has completed its circuit to the whirl about the Antarctic regions, should then, according to the laws of magnetism, be repelled from the south and attracted by the opposite pole towards the north.*" Although we have endeavoured, in a very brief space, to give our readers some idea of our author's argument in favour of a relation between the magnetism of oxygen (not the magnetism of the earth) and the circulation of the atmosphere, we cannot admit that it is either consistent with fact or sound in theory. Whatever it be which constitutes "the magnetism of the earth," we must look to it as the origin and regulator of any magnetic action which may be found to exist upon the currents in our atmosphere.¹

From the currents of the atmosphere our author passes to the currents of the sea, and he sets out with the assumption, "that from whatever part of the ocean a current is found to run to the same part, a current of equal volume is bound to return." It is not necessary that the ocean currents run, like our rivers, from a higher to a lower level. While some run on a level, others, like the Gulf Stream, actually run up hill. The currents from the Atlantic to the Mediterranean, and from the Indian Ocean into the Red Sea, run *down hill*. In order to explain this, in the case of the Red Sea, the surface of which is an inclined plane, Lieutenant Maury supposes its channel to be dry, smooth, and level, and that a wave ten feet high flows through the Straits of Babelmandeb up the channel at the rate of twenty miles a day, for fifty days, losing half-an-inch daily by evaporation. In this case it is obvious that, at the end of the fiftieth day, the wave will be twenty-five inches lower than it was on the day it began to flow. The surface of the sea consequently becomes an inclined plane by evaporation. The salt water, therefore, grows saltier and heavier; and as the lighter water at the Straits cannot balance the colder, saltier, and heavier water at the Isthmus, the latter must run out as an under current, otherwise it would "abstract all the water from the ocean to make the Red Sea brine," and ultimately a mass of solid salt.

¹ In support of the doctrine of the crossing of the air in the Equatorial Calm Belts, Lieutenant Maury adduces the fact, stated by Lieutenant Jansen and Dr Moffat, that ozone is most abundant in the Northern Hemisphere in winds that have *Southing* in them, and in the Southern Hemisphere in winds that have *Northing* in them; and, supposing that this remarkable substance is the production of thunder and lightning, he presumes that it may be generated "among the detonations and clouds and rains of the Equatorial Calms." If this be its origin, he then asks, how it "can cross the trade wind regions except with the upper currents?" We cannot answer this and other analogous questions which he very ingeniously puts; but, with all the respect which we have for the opinions and reasonings of our author, we are led rather to question than to maintain the doctrine which he advocates, when it requires such arguments to support it.

It has been long ago ascertained, that while there is a surface current from the Atlantic always running into the Mediterranean, there is an outward under current running into the Atlantic, and charged with the additional salt produced by evaporation from the inland sea. This opinion of our author has been controverted by Admiral Smyth and Sir Charles Lyell, from the fact that water taken fifty miles within the Straits, from a depth of 4020 feet, was found by Dr Wollaston to be *four* times saltier than common sea water, combined with the fact that the greatest depth of water at the Straits is 1320 feet. Hence they conclude that water, lying at depths greater than 1320 feet, can never flow out into the Atlantic over the submarine barrier at the Straits. Lieutenant Maury is at much pains to refute this apparently formidable objection to his theory, but he required only to refer to the beautiful experiments of Venturi on the lateral communication of motion in fluids, from which it is proved that a current of pure water passing over a deep pool of ink, or any other fluid coloured on purpose, would soon empty the pool, and replace the ink or coloured fluid with the pure water of the current. Hence it is manifest that the brine or very salt water which may occupy the depths or cavities of the Mediterranean Sea must be carried out into the Atlantic. Owing to the high temperature of the Indian Ocean, large currents of warm water have their origin there. * One of these is the Mozambique or Lagullas current. Another, escaping through the Straits of Malacca, and joined by others from the Java and China Seas, "flows into the Pacific, like another Gulf Stream, between the Philippines and the shores of Asia," towards the Aleutian Islands, tempering climates, and losing itself on its way to the north-west coast of America.

After treating of the currents in the Pacific, of Humboldt's current on the coast of Peru, of under currents and the currents in the Atlantic, Lieutenant Maury proceeds to discuss the very interesting subject of "The open sea in the Arctic Ocean." Dr Scoresby informs us that whales have been caught near Behring's Straits with harpoons in them belonging to ships known to cruise in Baffin's Bay; and as it has been ascertained that these whales could not have passed round Cape Horn or the Cape of Good Hope, it follows that they must have travelled in open water through the Arctic Sea. As an additional argument for an open sea near the Pole, our author mentions the existence of a warm under current from the Atlantic into the Arctic Ocean through Davis's Straits, and he adds the opinions of Lieutenant De Haven, Captain Penny, and Dr Kane,¹ who found an open sea in very high latitudes. Important as these arguments are,

¹ See this Journal, vol. xxvi., p. 426, 427, 440, 441.

the existence of an open sea at the North Pole itself may be inferred from the existence of two poles of maximum cold, surrounded by isothermal lines indicating increasing temperatures as we approach the Pole along the cold meridians which pass through the poles of cold, and the pole of revolution.

The influence of the saltness of the sea on the equilibrium of its waters is the subject of Lieutenant Maury's ninth chapter. We have already seen that, owing to evaporation from its surface, which increases the saltness of the sea in certain places, and to the introduction of large rivers of fresh water, and heavy falls of rain, which diminishes its saltness in others, it must have various degrees of saltness in different localities. The currents, however, which we have described as in the waters which have different degrees of saltness, produce sea water of a uniform degree of saltness; so that "the constituents of sea water are, generally speaking, as constant in their proportions as are the components of the atmosphere." In order to explain why the sea is salt and not fresh, Lieutenant Maury suggests that one of its purposes "was to impart to its waters the forces and powers necessary to make their circulation as complete," and "as perfect as is that of the atmosphere or blood." In support of his opinion, that the sea has a system of circulation for its waters, our author refers to the coral islands, reefs, beds, and atolls of the Pacific, built up with materials quarried, as he expresses it, by a certain kind of insect from sea water, which contains $3\frac{1}{2}$ per cent. of solid matter, supplied by rivers, in the form of common salt, sulphate and carbonate of lime, magnesia, soda, potash, and iron. If fresh supplies of these materials were not obtained by currents, the little creatures that build the coral rocks would perish for want of food before their work was finished.

Did the sea consist of fresh water, a feeble system of circulation would be produced by heat and evaporation alone, excluding the influence of the winds. Surface currents of warm and light water would pass from the Equator to the Pole, and another set of under currents, of cooler, dense, and heavy water, would pass from the Poles towards the Equator. But if the sea consisted of salt water, which contracts as its temperature is lowered till it reaches 28° , a new force is called into play. Evaporation in the trade wind region lowers the sea level, and increases the saltness of the sea. The water thus heavier sinks, while the lighter water rises, producing a vertical circulation. The raised vapour, carried by the currents of air to colder regions, gives to the ocean more fresh water as rain, or snow, than it returns to the atmosphere as vapour. The sea level is thus raised, and being depressed in the evaporating regions, a system of surface currents,

moved by gravity alone, passes from the Poles towards the Equator.

If the sea had not been salt from "the beginning," there would have been none of the sea shells that cover the top of the Andes, or those infusorial deposits which astonish us by their magnitude and extent, and none of the coral islands which adorn the Pacific. When the rains dissolve the salts of the earth, and the rivers carry them to the sea, the marine insects elaborate them into pearls, shells, and corals; and while they are preserving the purity of the sea, they assist in the regulation of climates in parts of the earth far removed from the spots where they dwell.

Without entering into the question, whence does the sea derive its saltiness,—whether, according to Darwin, from the washings of rains and rivers, or, as Lieutenant Maury believes, from the Almighty's fiat on the morning of the creation—it is interesting to notice the quantity of solid matter, in the form of salts, which the sea holds in solution. Taking the average depth of the ocean at two miles, and its average saline strength at three and a half per cent., its salt would cover, to the thickness of one mile, an area of seven millions of square miles, all of which passes into the interstices of sea water without increasing its bulk.

In a short chapter on "The Equatorial Cloud Ring," illustrated by his "Diagram of the Winds," we have the terraqueous globe divided into nine portions.

1. The Equatorial Cloud Ring, or the Belt of Equatorial Calms and Rains, or the Equatorial "*Doldrums*" of the sailor,—a word which we hope will escape from future treatises on the sea.

2. The *North-East* Trade Winds.

3. The Calm Belt of *Cancer*,—the "*Horse Latitudes*" of the sailor.

4. The prevailing winds from the Equator towards the *North* Pole.

5. The *North* Polar Calms.

6. The *South-East* Trade Winds.

7. The Calm Belt of *Capricorn*.

8. The prevailing winds from the Equator towards the *South* Pole.

9. The *South* Polar Calms.

The Equatorial Calm Belt is not only the region of calms and baffling winds, but also of rains and clouds; and under its dense, close, and sultry atmosphere, the Australian emigrants find it a "frightful grave-yard" for children and delicate passengers. Under this cloud ring, which encircles the earth, the thermometer and barometer stand lower than in the clear weather on either side of it. In the parallels over which it hangs, it pro-

motes the precipitation of rain at certain periods; and "by travelling with the calm belt of the Equator to the north or south, it shifts the surface from which the heating rays of the sun are to be excluded, and gives a tone to the atmospherical circulation of the world, and a vigour to its vegetation." When it has thus left the Equator, the rays of a vertical "torrid sun" scorch the earth. Plants wither. Animals die. The mitigating cloud ring returns, and the burning rays of the sun are no longer received on the surface of the earth, but upon the upper surface of the cloud belt. Under this heating influence the clouds "melt away and become invisible;" the sun's rays dissolving one set of elevations, and creating another set of depressions. Were this cloud ring luminous, and seen from one of the planets, it would, according to Lieut. Maury, resemble the Ring of Saturn, the side which is opposite us appearing "jagged, rough, and uneven;" and it would seem to have a motion contrary to that of the earth.

In exploring the physical geography of the sea, our author accompanies the geologist "far away from the sea-shore" to study the phenomena presented by the inland basins of the earth, the Dead Sea, the Caspian, the Lake of Aral, etc., which have no sea drainage, and he proposes to explain their present condition by what he calls "the geological agency of the winds." The Dead Sea, the most interesting of these basins, is 1500 feet beneath the general sea level of the earth. The geologist refers this remarkable depression to forces of elevation or subsidence which have resided in the vicinity of the basin; but Lieut. Maury supposes, and endeavours to show, that these forces have come from the sea in the other hemisphere, through the agency of the winds. He supposes that the amount of precipitation (of rain, snow, dew, etc.) upon the water-shed of the Dead Sea, etc., was, at some former period, greater than its present annual amount of evaporation, and he asks, from what part of the sea did that excess of vapour come? and what has cut off that supply, since the amount of evaporation is equal to that of precipitation, and the level of this and other rock seas is as permanent as that of the ocean? If the Dead Sea formerly sent a river to the ocean, it would carry off the excess of precipitation over the vapour raised, and carried away by the winds. According to our author, "the salt-beds, the water-marks, the geological formations, and other facts traced upon the tablets of the rocks, indicate plainly that the Dead Sea and the Caspian had upon them in former periods more abundant rains than they now have;" and he is of opinion that the supply has not been cut off by the elevation or depression of the Dead Sea basin, and that the upheaval of mountain ranges and continents across the

course of the winds has, by means of the winds produced upon inland lakes, the effect which would be occasioned by a greater or less amount of moisture.

As an example of drainage that has been cut off, and an illustration of the process by which precipitation and evaporation are equalised, our author takes the case of the Salt Lake of Utah, the basin of which is now salting up, and from which there is said to be the appearance of an old channel which once conducted its waters to the sea. If such a river existed, some cause must have operated to stop the supply of moisture, the excess of which was carried off by the river. Our author conceives that if the Sierra Nevada, the mountains to the west of the lake, now stand higher than they formerly did, and if the winds which fed the Salt Lake valley with moisture had to pass over the mountains, a less quantity of vapour would be carried across them than when the summit of the range was lower and warmer. In like manner, our author supposes that the Dead Sea, and the great inland basins of Asia, may have been deprived of the vapour which they once received when they were emptied by rivers into the sea, by the elevation of the South American continent, and the upheaval of its mountains. The elevation of the Andes has thus made Western Peru a rainless country, and Atacama a desert, by stopping the vapours of the ocean which fed them with moisture; and in the opinion of Lieutenant Maury, who adduces various ingenious arguments in support of it, it is the influence of the same range that has depressed the waters of the inland basins of Asia. According to geological speculations, the upheaval of one continent is supposed to be accompanied by the depression of another, as exhibited in the islands of the Pacific; and therefore, if we adopt the views of our author, we must take it for granted that no continent was depressed to the west of the Dead Sea when South America rose from the ocean. If the winds have the geological agencies now ascribed to them, our author conceives that they may instruct us in the chronology of geological events which have taken place in different hemispheres, "telling us which be the older—the Andes watching the stars with their hoary heads, or the Dead Sea sleeping upon its ancient beds of crystal salt."

The "Depths of the Ocean," whether they underlie the pure azure of the Indian seas, or the troubled current of the Gulf Stream, or the tangled sea-weeds which mat the Sargasso Sea, have a peculiar interest to the naturalist. While the land is the abode of vegetable, the sea is the home of animal life. In the sea bottoms, indeed, of the temperate zones, vegetation is peculiarly luxuriant; but in the tropical oceans the grandeur and abundance of marine life is more prominent still. "Whatever

is beautiful, wondrous, and uncommon in the great classes of fish and echinoderms, jelly-fishes and polypes, and molluscs of every kind, is crowded into the warm and crystal waters of the tropical ocean,—rests in the white sands, clothes the rough cliffs, clings where the room is already occupied, like a parasite, upon the first comers, or swims through the shallows and depths of the elements, while the mass of the vegetation is of a far inferior magnitude.”¹ On land, the animal kingdom is more widely diffused than the vegetable; but the arctic seas swarm with whales, seals, sea-birds, fishes, and countless numbers of the lower animals, even where the ice has obliterated every trace of vegetation. As we descend, too, from the surface, vegetable life disappears much sooner than animal; and from its hollows, which no ray illumines, the sounding lead attests the abundance of living infusoria.

While almost every corner of the land had been visited and explored by man, the bottom of what the sailors call *blue water* was utterly unknown to us. English, French, and Dutch navigators had attempted to fathom the deep sea, but their methods could not be relied upon beyond depths of eight or ten thousand feet; and even after great improvements had been made on the sounding apparatus in the United States, it was found that under currents prevented the lead from reaching the bottom, by carrying it out in the direction of the current. That this was the case, was proved by direct experiment. Lieutenant Walsh, of the U. S. Navy, with an iron wire sounding line *eleven* miles long, could not find the bottom at 34,000 feet. Lieutenant Berryman failed also in “mid ocean” with a line 39,000 feet in length; and Lieutenant Parker, in the same region, ran out a line 50,000 feet long without reaching the bottom. In order to solve the interesting problem of the sea’s depth, the Congress of the United States authorised the employment of three public vessels; and, after the investigations were completed, the following plan was adopted:—Every vessel that desires it is furnished with a quantity of sounding twine (600 feet to the pound), marked at every length of 600 fathoms, and wound on reels of 10,000 fathoms each. One end of the twine is attached to a cannon ball of 32 or 68 lbs., as a plummet, which is to be thrown overboard from a boat (not from the ship), and suffered to uncoil the twine as fast as it will. When the ball reaches the bottom, it is detached, and of course lost. By measuring the quantity of twine left on the reel, and subtracting it from the whole length, we have the required depth of the sea, “at the expense of one cannon ball and a few pounds of common twine.” In carrying out a system of deep-sea soundings, it was the practice to record the time taken by every hundred fathoms to

¹ Schleiden’s *Lectures*, p. 403, quoted by Lieut. Maury.

be uncoiled from the reel—a reel of the same size and “make,” and sinker or cannon ball of the same shape and weight, being always used. By this means the following law of descent was established :—

Average Time of descent.	Number of Feet descended.
2 min. 21 sec.	2,400 to 3,000.
3 „ 26 „	6,000 „ 6,600.
4 „ 29 „	10,800 „ 11,400.

As the under currents in the ocean would sweep the line out horizontally at an uniform rate, while the cannon ball would drag it down at a decreasing rate according to the preceding law, the observer was able to discover when the line was carried out by the influence of the current or drift alone, and thus to determine the true depths at which experiments were made. In this way it was placed beyond a doubt, that the depth of the sea was not so great as it had been found to be by the imperfect methods formerly employed, and that the greatest depths which had been reached were in the North Atlantic Ocean, and did not exceed 25,000 feet, or *four miles and three quarters*. The deepest place in the ocean is considered by Lieut. Maury to be between the parallels of 35° and 40° of north latitude, immediately to the south of the Grand Banks of Newfoundland.

Having thus succeeded in reaching the bottom of the sea, an additional contrivance was required to bring up specimens of the materials of which it was composed. This was accomplished by Mr Brooke, of the U.S. Navy, by means of his “Deep Sea Sounding Apparatus.” At the end of the tubular iron rod which passes through the cannon ball sinker, is placed a cup containing a little soap or tallow, called *arming*, to which the specimens of the sea bottom adhere, and are brought up, after the ball has been detached from the rod. By means of this apparatus, specimens have been obtained from depths of more than three miles,—some from the Coral Sea of the Indian Archipelago, and some from the Pacific and Atlantic Oceans.

Among the sea basins of the ocean, that of the Atlantic, the most frequented, has a peculiar interest, and is the subject of a long and interesting chapter in the “Geography of the Sea.” Lieut. Maury has given us an orographic projection of its bottom, in which the soundings are represented by *four* different degrees of shade. The *darkest*, which is nearest the shore line, indicating depths less than 6000 feet; the *next*, those less than 12,000 feet; the *third*, those less than 18,000 feet; and the *fourth*, or lightest, those not greater than 24,000 feet. From the blank space north of Nova Scotia and the Grand Banks of Newfoundland, very deep water has been reported. The deepest part is probably between the Bermuda Isles and the Grand Banks. In

another plate Lient. Maury has given a vertical section of the Atlantic, showing the contrasts of its bottom with the sea-level in a line from Mexico, across Yucatan, Cuba, San Domingo, and the Cape de Verd Islands, to a point in the coast of Africa, in the parallel of 16° of north latitude. The importance of this system of deep-sea sounding has been recently impressed upon the public mind, and may be regarded as one of the many proofs constantly presenting themselves, that there is no branch of physical knowledge which will not sooner or later find a practical and social application. In the soundings of the North Atlantic Ocean, the bold engineer who has faith in the resources of science, has seen the practicability of laying a cable across its bottom, from Cape Clear in Ireland, to Cape Race in Newfoundland, a distance of *one thousand six hundred and forty miles* ! Between these capes there is a remarkable steppe or ridge, already known as the *Telegraphic Plateau*, above which there is not more than 10,000 or 12,000 feet, or two miles of water. A company of enterprising and wealthy individuals has already been organised to carry a submarine cable across this plateau, and they have made a contract with a party in England to deliver to them in June 1858 a telegraphic cable of the required length ; and, notwithstanding the failure of their first attempt, we cannot doubt that it will be ultimately successful.

In connection with this elevated ridge across the Atlantic, there is a ridge on the land "which runs nearly, if not entirely, around the earth." Leaving America between 45° and 50° N., it includes Great Britain, separates the drainage of the Arctic Ocean from the drainage southwards, and forms a chain of steppes and mountains extending across the continent of Asia, and disappearing in the Pacific. It was in the subaqueous part of the ridge that Brooke's sounding apparatus brought up calcareous shells of the Foraminiferæ, while in the Coral Sea the silicious infusoria and the Polythalamia were obtained ; and more recently Lieutenant Berryman has found obsidian, pumice, etc., forming a line of volcanic cinders a thousand miles long, and stretching wholly across the Gulf Stream where the submarine cable is to be laid. Lieutenant Maury and others have found it difficult to determine the source of these volcanic materials. Occupying a line so extended, it is not unreasonable to suppose that submarine volcanoes were situated in or near the place where their products have been found. The specimens of animalcular life obtained from various seas place it beyond a doubt that the bed of the ocean is a vast cemetery consisting almost entirely of the remains of infusoria ; and the unabraded appearance of these shells, and the almost total absence of any sand or other matter, seems to show that the bottom of the deep sea is in a state of perfect repose.

Although our author, in his chapters on the Atmosphere, and on Land and Sea Breezes, has treated generally of the Trade Winds, etc., and the Calm Belts which limit them, he devotes a long and valuable chapter to their more particular consideration, and their connection with the monsoons and other winds which prevail in different parts of the globe. The results at which he has arrived are exhibited in a Chart of the Winds and their routes in every part of the ocean,—the North-East Trades—the South-East Trades—the South-East and South-West Monsoons—the North-East and South-West Monsoons—the prevailing Westerly Winds, and the routes and average passage of ships (in days) bound to different ports in the Atlantic, Indian and Pacific Oceans. The *Monsoons* are those winds which blow during one half of the year from one direction, and during the other half from nearly an opposite direction. These winds are generally formed from trade winds. When “a trade wind is turned from its regular course, from one quadrant to another, or drawn in by overheated districts, it is regarded as a monsoon.” When the monsoons have blown for five months, and become settled, both they and the trade winds which they replace are called monsoons. M. Dove considers the S.W. monsoon as the S.E. trade wind; and Lieutenant Jansen, that the N.W. monsoon is a similar deflection of the N.E. trade wind. The monsoons are produced by the overheated regions in Africa, Asia, and America; and their occurrence may always be known from the time when it is the hottest season in these localities.

The phenomenon called the *Changing of the Monsoons*, is beautifully described by Lieutenant Jansen, and quoted by our author. Gusts of wind arise, and are followed by calms. Thunder-storms occur day and night. Water-spouts, often 200 yards high and 20 feet wide, but sometimes 700 yards high and 50 yards wide, are formed by clouds descending in a tunnel form, and appearing to lap the water with their black mouths. When the wind prevents their formation, wind or air-spouts, more dangerous than water-spouts, shoot up like an arrow, and the sea makes vain attempts to keep them back. Lashed into fury, the sea marks with foam the path of the conflicting elements, and roars with the noise of its water-spouts.¹

The climates of the sea, discussed in Lieutenant Maury's fifteenth chapter, differ greatly from those of the land. At sea, March is the coldest, and September the warmest month; whereas, on land, February is the coldest, and August the

¹ Lieutenant Jansen has observed a current in the air as remarkable as that of the Gulf Stream in the sea. This atmospherical gulf stream, as Lieutenant Maury calls it, is in the south-east trade winds of the Atlantic, and extends from the Cape in a direct line to the Equator. The homeward-bound Indian sails himself of it, as the European-bound American does of the Gulf Stream.

warmest. The reason of this is obvious. After winter, the solid dry land receives more heat from the sun in the day than it radiates at night, and hence it accumulates till it reaches its maximum in August. It is otherwise, however, with the sea. In it the surplus of summer heat is stored up to alleviate the severity of winter, and its waters increase in warmth for a month after the solid earth has begun to cool. On account of the great quantity of sea surface raised to a high temperature on the north side of the Equator compared with that on the south side, the summer in the Northern is hotter than that in the Southern Hemisphere. In the Atlantic this is undoubtedly the case; but in the Pacific observations are not sufficiently numerous to enable us to compare the temperatures of the two hemispheres in which it lies.

If we consider the ocean as a mass of water influenced *only by heat and cold*, it is obvious that it must be subject to certain surface movements different from those currents of which we have treated. An object, such as a floating bottle, set adrift at the Equator, and uninfluenced by the winds, would be carried to the fixed ice near the Poles, and would travel back by the same influences to the warm waters at the Equator. Lieutenant Maury has given an interesting map to illustrate the circulation of the ocean under the sole influence of heat and cold, and to indicate the routes by which the heated waters of the Torrid Zone escape to the regions of cold, and "the great channel ways" by which the same waters return again to the Equator. According to the best information which Lieutenant Maury has obtained, the velocity of these heated and cooled currents is, at an average, only *four knots a day*, and rather less than more. The immense body of warm waters in the middle of the Pacific and Indian Oceans, which give birth to the drift currents, are regarded by our author as the *womb of the sea*, teeming with organic life, so thickly distributed as to give "crimson, brown, black, or white colours to the waters which bear it." These coloured patches often extend as far as the eye can reach. One of these white spaces, 23 miles long, resembled a plain covered with snow. Its water was crowded with luminous worms and insects, some of the "serpents" being six inches long. Other patches that are pink coloured contain well-defined animalcules. The colour of the Red Sea is derived from a delicate kind of sea weed, and that of the Yellow Sea from a similar cause.

Under the head of *Drift Currents*, Lieutenant Maury describes a commotion in the water, called "Tide Rips," revealing a conflict of tides or currents. They are generally found near the equatorial calms, starting up without any wind, and moving along at the rate of 60 miles an hour with a roaring noise, "as if they

would dash over the frail bark, helplessly flapping its sails against the masts." To other unexplained movements of the sea, the name of *Bores* and *Eagres* has been given. The Bores of India, of the Bay of Fundy, and of the Amazon, are the most remarkable. They are tremulous tidal waves, which roll in periodically from the sea, engulfing deer, horse, and other wild beasts that frequent the beach. The name *Eagre* is given to the Bore of Tsien-Tang river. It attains its greatest magnitude opposite to the city of Hang-chau, one of the busiest in Asia; and when it appears, it is announced with loud shouts from the sailors, drowned in its noise of thunder. All work comes to a stand. A wall, like one of chalk, or rather a cataract, 4 or 5 miles across and 30 feet high, advances with a velocity of 25 miles an hour. It passes up the river in an instant with diminishing velocity, occasionally reaching a point 80 miles distant from the city. The rise and fall of the wave is sometimes 40 feet at Hang-chau, and it is supposed to be produced by a peculiar configuration of the river and its estuary.

After describing these movements, and others equally inexplicable, our author, rather fancifully, regards them as "the pulsation of the great sea-heart, which may *perhaps* assist in giving circulation to its waters through the immense system of aqueous veins and arteries that run between the equatorial and polar regions." In the machinery which governs the sea, the sunshine, the clouds without rain, the day and night, with their heating and radiating processes, are the cogs and notched wheels which compose it, and which, amid all the jarrings of the elements, preserve in harmony the exquisite adaptations of the ocean.¹

There is no branch of the Geography of the Sea more interesting to the reader, or more important to the mariner, than that which treats of the rotatory storms, and the hurricanes of the ocean. Our author treats of them in a very imperfect manner, and in a very brief chapter. It consists chiefly of a long extract from Lieut. Jansen's work, in which no reference is made to

¹ On his Chart exhibiting the sea-drift our author has also marked the most favourite places of resort for the *right whale* and the *sperm whale*, the former occurring in cold, and the latter in warm water. Cold water fish being more edible than those of warm water, we see on the Chart the places which are most favoured with good fish markets. "In the course of these investigations," says Lieutenant Maury, "the discovery was made that the Torrid Zone is to the right whale as a sea of fire, through which he cannot pass; that the right whale of the Northern Hemisphere and that of the Southern are two different animals; and that the sperm whale has never been known to double the Cape of Good Hope—he doubles Cape Horn."

In the Drift and Whale Chart our author has marked a large space between New Zealand and the southern part of America as a *desolate region, in which mariners find few signs of life in the sea or air*. The meridian of 120° west longitude, and the parallel of 45° south latitude, pass through its middle point.

the valuable labours of the late Mr Redfield¹ of New York, of Professor James Espy of Washington, or of our distinguished countryman, Sir William Reid. The typhoons or white squalls of the China seas are furious gales of wind, arising from disturbances of the atmospherical equilibrium generated among the arid plains of Asia. Their influence extends to the China seas, which are included in the region of the monsoons of the Indian Ocean; and during the changes of these monsoons the typhoons and white squalls prevail.

The *Cyclones* of the Indian Ocean, or the Mauritius hurricanes, take place during the contest between the trade wind and monsoon force, at the changing of the monsoon, and when neither force has gained the ascendancy. At this period of the year the winds "seem to rage with a fury that would break up the very fountains of the deep."² The West India hurricanes take place when the monsoons are at their height. The trade wind and monsoon forces now pull in opposite directions, and most powerful revulsions of the atmosphere are required to restore the equilibrium of the atmosphere. The hurricanes in the North Atlantic Ocean take place during the African monsoons, and those of the South Indian Ocean in the opposite season of the year, during the prevalence of the north-west monsoons of the East Indian Archipelago. This coincidence of hurricanes with monsoons is supposed by Jansen to indicate that the one disturbance is the cause of the other. In the rotatory storms north of the Equator, the motion is from the right hand to the left; and in those to the south of the Equator, from the left hand to the right, like the hands of a watch. Judging from the Storm and Rain Charts of the Atlantic, the half of the earth's atmosphere which covers the Northern Hemisphere is in a much less stable condition than that which covers the Southern. "There are, as a rule, more rains, more gales of wind, more calms, more fogs, and more thunder and lightning, in the North than in the South Atlantic."

We regret that our limits will not permit us to give an account of the researches of the authors we have already mentioned, on the subject of the Cyclones or Rotatory Storms. So early as 1838, Sir William Reid suggested to the East India Company that they should take steps to trace the storm tracks in the Indian seas. The suggestion was adopted; and all the officers of the Company, civil and military, were instructed to send their observations to Mr Piddington at Calcutta, himself

¹ Mr Redfield's name is only once referred to in a note.

² In one of these hurricanes, accompanied by hail, in the South Indian Ocean, in 22° south latitude, several of the crew were made blind, others had their faces cut open, and those who were in the rigging had their clothes torn off.

an able seaman, who undertook the task of collecting them, and publishing the results. After communicating numerous memoirs on the subject to the *Journal of the Asiatic Society of Bengal*, he published an abstract of the whole in his valuable work, entitled *The Sailor's Horn-Book of the Law of Storms in all parts of the World*. The late Mr W. C. Redfield of New York had previously devoted much time to the same subject, and published various important works on the storms of the West Indies and the coasts of the United States.¹ Colonel Capper² had, so early as 1801, attempted to show, that the hurricanes of the East were great whirlwinds; and he merely hinted at the idea, that they had a progressive motion. Mr Redfield, whose position on the Atlantic coast, gave him the finest opportunities of observing these phenomena, came to the conclusion, that the hurricanes of the West Indies were, like those of the Indian Seas, great whirlwinds, and that the whole of the revolving mass of atmosphere advanced with a progressive motion from south-west to north-east; and hence he draws the conclusion, *that the direction of the wind at a particular place, forms no part of the essential character of the storm, and is, in all cases, compounded of both the rotative and progressive velocities of the storm, in the mean ratio of these velocities*. In the further prosecution of this subject, he was led to the important result, that the great circuits of wind, of which the trade winds form an integral part, are nearly uniform in all the great oceanic basins, and that the course of these circuits, and of their stormy gyration, *is, in the SOUTHERN Hemisphere, in a COUNTER DIRECTION to those in the NORTHERN one, producing a corresponding difference in the general phases of storms and winds in the two Hemispheres*.³

Our distinguished countryman, Sir William Reid, was led to study this subject, in consequence of being employed at Barbadoes to re-establish the Government buildings blown down by the hurricane of 1831, in which 1477 persons perished in the short space of seven hours. Impressed with the conviction that Mr Redfield's views were correct, he endeavoured to verify them, not only by projections, on a large scale, of the facts given by the American author, but by facts taken from the logs of British ships furnished to him by the Admiralty. By thus grouping the various phenomena of numerous storms, he convinced himself of their rotatory and progressive character, and

¹ See Silliman's *Journal*, vols. xx. and xxi.; Blunt's *American Coast Pilot*, 12th edition, pp. 626-629; and *The United States Naval Magazine*.

² *On the Winds and Monsoons*. 1801.

³ The English reader who has not access to Mr Redfield's works, will find a pretty full abstract of their contents in a review of them, entitled, *On the Statistics and Philosophy of Storms*, written by the author of this article, and published in the *Edinburgh Review* for January 1839, vol. lxxviii., pp. 406-432.

arrived at the conclusion, that they derive their destructive power from their rotatory force, and that the storms south of the equator revolve in a contrary direction—namely, from left to right—to that which they take in the Northern Hemisphere. These views seem to have been generally adopted by meteorologists, with the exception of Professor Espy, who maintains that, in the hurricanes supposed to be rotatory, the winds blow to a certain point, and that the idea of the rotation and translation of great bodies of air is inconsistent with the observed phenomena. Dr Hare, and our able countryman, Mr Russell of Kilwhiss,¹ have adopted the same opinion; and several meteorologists who had embraced the rotatory theory, have evinced a disposition to abandon it.

Having shown his readers how the winds blow and the currents run in all parts of the sea, Lieutenant Maury exhibits, in an interesting chart, the principal routes across the ocean; the great end and aim of all his researches being the shortening of passages, and the improvement of navigation. The routes are marked by the figures of vessels, upon which are engraven the average passage in days, and which are crossed by lines that show whether the prevailing direction of the wind be adverse or fair. The winds and currents which are met with in these routes are so well understood, that vessels sailing, with the same destination, on different days of the week, may count upon coming up and meeting one another at different parts of their route. If two ships, for example, sail from New York to California, the one a week after the other, the faster of the two will make up to the other; and they will cross each other's paths many times, the tracks of the two vessels being sometimes so nearly the same, that, when projected on the chart, they would appear almost coincident.

The route from New York to California is 15,000 miles in length. "It is," says Lieutenant Maury, "the great race-course of the ocean. Some of the most glorious trials of speed and prowess that the world ever witnessed among ships that 'walk the waters,' have taken place over it. Here the modern clipper ship—the noblest work that has ever come from the hands of man—has been sent, guided by the lights of science, to contend with the elements, to outstrip steam, and astonish the world. The most celebrated ship-race that has ever been seen, came off upon this course in the autumn of 1852, when *four* splendid new clipper ships put to sea from New York, bound for California.

¹ *North America—its Agriculture and Climate.* By Robert Russell, Kilwhiss. Edinburgh, 1857. The eighteenth chapter of this excellent work, entitled, *Climate of North America*, and illustrated with numerous diagrams, will be read with the deepest interest by every meteorologist.

They were ably commanded. . . . Like steeds that know their riders, they were handled with the most exquisite skill and judgment. Each being put upon her mettle from the start, was driven under the seaman's whip and spur at full speed over a course that it would take them three long months to run." Lieutenant Maury has given a minute and interesting account of this race, detailing all the adverse and favourable events which occurred in the voyage of each ship; and he concludes it with the following observation:—"Here are three ships, sailing on different days, bound over a trackless waste of ocean for some 15,000 miles or more, and depending alone on the fickle winds of heaven, as they are called, to waft them along; yet, like travellers on the land, bound upon the same journey, they pass and repass, fall in with and recognise each other by the way; and, what perhaps is still more remarkable, is the fact, that these ships should, throughout that great distance, and under the wonderful vicissitudes of climates, winds, and currents which they encountered, have been so skilfully navigated, that, in looking back at their management, I do not find a single occasion on which they could have been better handled."

In concluding this interesting chapter, our author mentions a remarkable fact, illustrative of the accuracy of the knowledge which we now possess concerning the force, set, and direction both of winds and currents. He had calculated the detour which these three vessels would have to make, on account of adverse winds, between New York and their place of crossing the Equator. The whole distance was, according to his computation, 4115 miles. One of the ships reached the Equator after sailing 4077 miles, and the other after sailing 4099 miles—the one within thirty-eight, and the other within sixteen miles of the computed distance.

Such is a brief analysis of Lieutenant Maury's able and valuable work—the foundation of a new science, which cannot fail to be cultivated with ardour, because all nations, whether maritime or inland, have the deepest interest in its advancement. It is no slight merit to have collected, as our author has done, the numerous and important facts which constitute the "Geography of the Sea," and to have deduced from them general views of the economy of the ocean, and practical rules for its navigation; but Lieutenant Maury is entitled to the higher praise, of having organised, in the United States, a numerous staff of observers, to prosecute his favourite inquiries, and of having successfully appealed to the sympathy and co-operation of the most important maritime communities.

In bringing under the notice of our readers works of such

transcendent merit as that of Lieutenant Maury, we are never disposed to view them with a critical eye, and have seldom exercised the unenviable and much abused privilege of our craft. Regarding the "*Geography of the Sea*," however, as a standard work, which must pass through many editions, and receive many corrections and additions from every sea-faring observer, we feel that we are, in some degree, conferring a favour on its author, by a frank expression of the sentiments with which we have perused it. As a work on general physics, in which new phenomena are to be referred to established laws, we are disposed to think that it requires some revision, both with regard to its theoretical deductions, and the grouping of the facts which are supposed to authorise them. Lieutenant Maury himself frequently tells us that his views, on certain points, are merely provisional, and adopted till some better explanation is obtained; but this process is hardly compatible with the principles of the inductive philosophy, and we would rather have facts without causes, than facts but provisionally explained.

In the structure and composition of the work, too, there is considerable repetition, both of the facts and theories which it contains. We find the same ideas sometimes repeated in the same page, and frequently in different parts of the volume; and, though sharing in the religious conviction, we cannot bring ourselves to approve of the reiterated calls which the author makes upon us to admire the wisdom and beneficence of the Creator, in the currents of the ocean and of the air, and in the part which they play in the amelioration of climates, and in the other beneficent arrangements and adaptations which human interests demand. Sentiments so just and noble, we cannot but feel and admire. "The great globe and all that it inherits," is a mechanism as complete as any of its individual organisms; and the hurricanes, the thunderstorms, the famines, and the pestilences, at which humanity shudders, are as essential parts of its mighty frame, as the nerves, and arteries, and muscles, of organic life. To know and to cherish this great truth, is an acquisition of no ordinary value; but it may be unwise to weaken it by repetition, and still less wise to insist upon our admiring speculative adaptations, which, in the progress of science, may turn out to be imaginary.

In the character of our author's mind, marked by strong religious convictions, we discover the source of another imperfection in his work, to which we have felt some difficulty in referring. It is now, we think, almost universally admitted, and certainly by men of the soundest faith, as well as by the most devoted believers in the verbal inspiration of the sacred writings, that the Bible was not intended to teach us the truths

of science. The geologist has sought in vain for geological truth in the inspirations of Moses, and the astronomer has equally failed to discover in Scripture the facts and laws of his science. Our author, however, seems to think otherwise, and has taken the opposite side, in the unfortunate controversy which still rages between the divine and the philosopher. Even on the subject of winds and waves, he quotes the authority of the sacred page, and this so frequently, that we cannot produce a better antidote to his views, and a better argument in support of our own, than by a simple quotation of the passages in which he appeals to Scripture :—

“The Bible,” says our author, “frequently makes allusion to the laws of nature, their operation and effects. But such allusions are often so wrapt in the folds of the peculiar and graceful drapery with which its language is occasionally clothed, that the meaning, though peeping out from its thin covering all the while, yet lies, in some sense, concealed, until the light and revelations of science are thrown upon it; then it bursts out, and strikes us with exquisite force and beauty.”

“As our knowledge of nature and her laws has increased, so has our understanding of many passages in the Bible been improved. The Psalmist called the earth the ‘Round World;’ yet for ages it was the most damnable heresy for Christian men to say the world was round; and, finally, sailors circumnavigated the globe, proved the Bible to be right, and saved Christian men of science from the stake.

“‘Canst thou tell the sweet influence of the Pleiades?’ Astronomers of the present day, if they have not answered this question, have thrown so much light upon it as to show that, if ever it be answered by men, we must consult the science of astronomy. It has been recently all but proven,¹ that the earth and sun, with their splendid retinue of comets, satellites, and planets, are all in motion around some point or centre of attraction inconceivably remote, and that that point is in the direction of the star Alcyone, one of the Pleiades! Who but an astronomer, then, could tell their ‘sweet influences?’

“And as for the general system of atmospherical circulation, which I have been so long endeavouring to describe, the Bible tells it all in a single sentence: ‘The wind goeth towards the south, and turneth about unto the north; it whirleth about continually, and the wind returneth again according to its circuits.’—*Eccles.* i. 6. . . . Have I not, therefore, very good grounds

¹ This is not the opinion of Astronomers. It is a speculation of M. Mædler, a German Astronomer. The central point referred to is situated between the stars α and μ *Herculis*, at a quarter of the apparent distance of these stars from α *Herculis*. See this *Journal*, vol. iv. p. 232, vol. vi. p. 241, and vol. viii. p. 532.

for the opinion, that the 'wind in her circuits,' though apparently to us never so wayward, is as obedient to law, and as subservient to order, as was the morning stars when they 'sang together.'"

Among the nations that sent representatives to the Brussels Conference, and agreed to co-operate with the United States in carrying on an uniform system of observations at sea, our own country stood conspicuous, and we are glad to say that a Meteorological Department was added to the Board of Trade, and placed under the able superintendence of Rear-Admiral Fitzroy, for the purpose of carrying on this important undertaking. The Board has already issued several valuable works;¹ and when we consider the vast extent of the shipping interest of Great Britain, its numerous vessels of war and of commerce, we have no doubt that a body of facts will be collected respecting the currents, winds, and hurricanes of the ocean, which, while it will improve the art of navigation, and add to our knowledge of the physical geography of the terraqueous globe, will also give additional security to the life and property so largely exposed to the abnormal influences of the elements. There is no branch of administration of more value to the state than that which has been so recently intrusted to the Board of Trade; and we trust that the ephemeral governments, to which English interests seem destined to be committed, will not forget, in their struggles for power, that a permanent reputation may be gained by those peaceful achievements which contribute to the happiness of society and the wealth of nations. We do not now ask them, as we have often done in these pages, to take an interest in those abstract sciences which sooner or later find a social and practical application. They have hitherto failed to appreciate what we unwillingly think seems above their comprehension, and we must wait in patience till a better education shall place the statesmen and senators of another generation on a level with the advisers of foreign princes, who have endowed the sciences and the arts as the most enduring sources of national greatness.

¹ These publications are enumerated in the list of works placed at the head of this article.

ART. VI.—*Parliamentary Government, considered in reference to a Reform in Parliament.* By EARL GREY. London: Bentley, 1858.

A POLITICAL treatise by an eminent public man ought to be peculiarly instructive; inasmuch as its theoretic reasoning must, in a greater or less degree, be guided by direct experience. The British statesmen of this generation rarely condescend to contribute to political literature, except in the shape of controversial essays, directed simply to a defence of their respective opinions. This characteristic of the leading men in either House, is unfortunately on the increase. Since the appearance of Mr Gladstone's "State and Church," twenty years ago, no important work on the public interests of this country, although the occasions have not been wanting, has appeared from the pen of any of our statesmen. The treatises of Sir G. C. Lewis are entirely of an abstract character. This change, there is no doubt, has partially resulted from the great development of the newspaper press, which tends to anticipate all other political criticisms than those which are delivered within the walls of Parliament. It follows that nearly the whole benefit which legislation can derive from the dispassionate treatment of political questions in literature, must be derived from pure theorists.

It may be doubted whether this growing characteristic does not apply, with equal force (*mutatis mutandis*), even to the school of French statesmen. The insecurity of government in France, which renders the political controversies of the day wider in that country than in our own, commensurately widens also the breach between political parties. Questions which here are ministerial, are dynastic there. French statesmen, driven from office, are more often driven into exile; while British statesmen, driven from office, become sometimes more prominent in opposition. An exiled statesman has not only more leisure (where indeed exile is not attended by poverty) to examine political questions on paper than a statesman active in opposition; he is not only deprived of all other means of openly influencing opinion in his own country; but the party questions in which his own fortunes are involved demand a treatment proportionately more comprehensive. The party spirit, therefore, which develops itself in inquiries into the general philosophy of government in the political writings of French statesmen, is but the analogue of the

party-spirit which rarely penetrates beyond questions of detail, in the essays and pamphlets of public men in this country.

But it must not be supposed, in consequence of the peculiar position of Lord Grey's work among the productions of living statesmen, that it affords a true index of the abilities of the author. Few men combine practical with theoretic talent. Still fewer at once speak well and write well. Even Burke not less completely failed as a debater than Lord Grey can be said to fail as a writer. This author's eminence in debate, therefore, may shield his fame against the prejudicial deductions that might otherwise be fairly drawn from the deficiencies of his present work. But its carelessness is almost unpardonable. It bears not the slightest trace of revision. A practised writer could have reduced it within one-half its compass, by simply striking out tautologies, verbiage, and self-contradictions. Its truisms are sometimes so gravely and axiomatically enforced, as to create a smile for their solemn triteness. Thus, Lord Grey tells us, at p. 41, in dealing with parliamentary corruption, "*that no just objection can be taken to a man's seeking employment in the public service, for himself, his friends, and his relations, by honourable means!*"

A writer who will gravely commit such assertions to a designedly didactic essay, can hardly complain if critics ignore his capacity for public teaching. Another error of equal import rests in the extraordinary length to which Lord Grey carries his demonstration of propositions which every reader would be content to assume, and which not seldom are self-evident. Such a mode of treatment is admissible only in deep philosophical investigations, in which every sentence represents a distinct logical process, and in which deductions, in themselves obvious, are drawn out in words simply as links in a continuous chain of the closest reasoning. These pervading defects of Lord Grey's essay, are the more to be regretted, inasmuch as they tend to blind a casual reader to many observations of much force and originality, and to the valuable record of thirty years' experience in public life of an acute and observant statesman.

The most prominent characteristic of this essay is probably the entire absence of party bias. This, indeed, might seem a peculiar merit in a statesman who, since he was one-and-twenty, had been immersed in party strife, did we not remember that Lord Grey has himself practically repudiated the Whig communion, and during the last six years has stood aloof from every combination. But it is a characteristic, at any rate, which implies sincerity of profession and singleness of purpose. When a nobleman, in the enjoyment of public reputation, comes forward, neither to promote his party views nor to vindicate his own

policy, but to express convictions, which are at least the result of his experience and reflection, he is certainly entitled to a courteous reception from his opponents. That courtesy, we think, he has not received; and while we shall not shrink from pointing out the shortcomings of his reasoning, we shall hope to do justice to the observations which tend to advance the subject of parliamentary government.

It will be our aim, in the present article, to deal, *first*, with the general principles argued by Lord Grey, so far as they form a basis for the decision of the practical questions of reform that are about to be discussed in Parliament; and, *secondly*, to point out the cardinal defects in the existing system of representation throughout the United Kingdom.

The principles shadowed forth by Lord Grey in this Essay, are exactly such as tend to cut him off from communion with every recognised school of public men. His view of the *το καλον* of politics, is the maintenance of the *status quo*. He is no ally of the old Tories, who look back to everything subsequent to the Liverpool administration, as to a hideous dream; and he is no ally of the Reformers, who seek to improve on the Reform of 1832. He is equally scandalised by the corruption which preceded the Reform Act, and apprehensive of the insecurity which he thinks a further revision of the House of Commons must create. On some points he is prepared to regard the Act of 1832, as too comprehensive. Now, the isolation of these views is a fair test of their candour and sincerity. But it will be seen, from a review of the grounds on which they are based, that they are neither logical nor consistent, and tend to build up an entirely unintelligible proposition.

The original axiom of Lord Grey's theory, though different from that on which politicians commonly raise their theories of reform, is at least plausible. He sees the true test of a wise representation, not in its fidelity in representing the different classes of the nation, but in the effect which such a representation may produce on the stability of the executive government. Politicians will always differ on this head, according as they may conceive these tests to differ or to coincide. The genuine liberal will declare that the representation of every class in the legislature, is a higher aim than the mere strength of the executive; and, moreover, that that representation affords also the best security for the excellence of the executive itself. Both Lord Grey and the Liberals, therefore, converge to the same end—the character of the Administration—in consequence of their seeing administrative excellence under different conditions. Lord Grey's definition of an excellent government is (in great measure at least) a strong government. His proposition may

also be accepted or ignored, according to the sense in which a strong government is understood. But Lord Grey assumes this strength to consist in the secure maintenance of parliamentary majorities, by other than patriotic and disinterested support—that is to say, by corruption. Now this is not only a proposition to which every advocate of honest government, as well as every theoretic liberal, would demur, but it is irreconcilable with Lord Grey's antecedent postulate. For even if we were to concede, for argument's sake, both the necessity of a strong government, and the impossibility of securing it, otherwise than by parliamentary corruption, and a false popular representation, yet if this corruption, and this false representation were to be preserved for the sake of executive stability, there ought to have been no reform at all, since Lord Grey refers the present weakness of government to these causes. He stands, therefore, indefensibly enough, midway between two distinct principles, each in itself perfectly intelligible. He is an earnest advocate of the corruption which still exists; but he is a no less vigorous assailant of the corruption which existed under George III. And he freely acknowledges, that the corruption which remains, although considerable, is insufficient for the maintenance of a strong government. Probably a more damnifying argument against the present system of corruption, was never yet put forward by one of its own defenders.

Lord Grey's argument in favour of a "strong government," is worth a moment's analysis, as the foundation of his whole principle. We accept the term in the author's own sense, and denote that kind of administration which can rely upon the support of a majority in Parliament, or any particular measure, without direct reference to the excellence of the measure itself. Such a state of things can only exist either under strong pressure, or under the vigorous discipline which great party questions can alone maintain. Accordingly, whenever these great party questions become defunct, "strong administrations" could only exist on a double basis of parliamentary corruption and borough nomination, where there was an equal pressure within and without the walls of Parliament. The absurdity of such a system, in a representative government, is too obvious for comment. If it were needful for Peers to nominate members of the House of Commons, and for government to bribe both the nominees and the nominating Peers, in order to maintain an administration in power, it was clear either that the administration was unworthy of confidence, or that the people were unfit to be trusted with power. At any rate, representation was a mere stalking-horse for aristocratic government. There could be no defence of a system intrinsically illusive and corrupt. Accordingly, Lord

Grey himself does not go so far as to test and condemn the Parliamentary Reform of 1832, by its effect on the strength of administrations, although he is clearly of opinion that the reform was too comprehensive. But he does go so far as to test further reform by this standard, and to condemn it because he deems it inconsistent with a strong executive.

Now, we clearly hold the "strength" of the executive is of less moment than the fidelity of the representation. But while we would not distort the representation simply to strengthen the executive, we are ready to acknowledge that the derision, with which it is now the fashion to treat the old conservative theory of a "strong government," is carried beyond justice. Mr Hallam, as the mouth-piece of the theoretic Liberals, asserts, that no government requires any other strength than that which flows spontaneously from the excellence of its administration. Lord Grey, on the other hand, would hold, that a minister should possess some antecedent confidence in his ability to press his measures in the Commons. His opponents have already replied to him, that he entirely mistakes the functions of government; that it is the duty of a minister to overlook and superintend everything, and to alter, as little as possible.

This is no answer to Lord Grey's position. If we refer to the parliamentary history of the last thirty years, since the accession of the Duke of Wellington's ministry, in 1828, we shall find it an unbroken history of legislative change, legal, fiscal, and constitutional. We shall find that nearly every government has acceded to power and has fallen from power, not on questions of general administration, but on some one principle affecting our polity, our finances, or our jurisprudence. These definite points of issue have commonly been the distinct and real grounds on which the falling government has lost parliamentary confidence. In the face of these examples, and of this period of time, it is hardly possible to describe the most important function of government as consisting in *supervision*; and the less important function, as consisting in *change*. It may be answered, perhaps, that, during the last thirty years, we have been in an abnormal condition, in consequence of an accumulation of abuses in our constitution. But, if we admit this assertion to be partially true, it is not less certain that we see no end to the vista of reforms which encircle the path of the future. It is clear, therefore, that, important as may be the duties of mere administrative supervision, there is no evasion of the destiny of legislative change. And it is a striking illustration of the practical acknowledgment of this view of the case, that whenever a government takes office weak in parliamentary support, it invariably bases its prestige on its reforming activity. This has

been exemplified by the only three Conservative governments which have assumed office, since the Reform Act, in the face of a hostile majority. It has been instanced by the Peel ministry of 1834, by the Derby ministry of 1852, and by the Derby ministry, which exists at this hour. The greater the weakness of government in the House of Commons, the greater has been the impulse of legislation.

Now the practice of parliamentary government, which renders a division upon the chief questions introduced by ministers a test of confidence in them, has a direct bearing on this question. If a ministry be compelled to legislate, and be compelled also to receive the acceptance or refusal of their measures by parliament as a test of its confidence, it is quite clear that they will shape their measures, in a great degree, not according to what they believe to be most expedient, but according to what they believe most practicable. They will continually be tempted to forego their principles for their places. Now, it is a distinct advantage in a "strong government," that this liability can rarely exist. On the abstract proposition, therefore, of the advantage of a strong government, Lord Grey is presumptively in the right.

But it is not less clear, on the other hand, that if ministers are now in the habit of deviating from their convictions (as Lord Grey himself complains), under a fear of faction in the House of Commons, the maintenance of the *status quo* is not the expedient which is to cure the evil. A government strong in parliamentary, as distinguished from national support, is now a chimera. Whatever risks we encounter in a new reform, we cannot, at all events, risk a possession which we have already lost. And the apprehension of Lord Grey, that government will be further weakened by a further reform, depends entirely on the nature of the reform itself. The reform which we hope to see accomplished, is that of a more just representation of the intelligent classes, not an increase of democracy. Such a reform must tend to the greater stability of Parliament.

Now, it appears that this is just what is required, in order to give the country that "strong executive," under a free Parliament, which it formerly possessed under an aristocratic Parliament. We fully concur with Lord Grey, that we have not, under our present constitution, that guarantee for the security of government that we should desire. We believe that this is to be obtained only by progress or retrogression. We fully acknowledge that, in the old constitution, much was swept away that ought to have been retained. But we are equally certain, that in order to bring back that administrative stability, —the loss of which Lord Grey laments— it would be necessary to reintroduce a corruption, and a bondage, which would be equally

impolitic, and impracticable. Lord Grey's disposition to halt midway upon the bridge, is therefore entirely inconsistent with the end which he holds in view. Now, the evidence that the evil in question rests rather with the House of Commons than with the country at large, is to be found in the fact, that the country has nearly always proved more stable than the House of Commons. The combination against Lord Palmerston's government by Parliament, in February 1857, and the reversal of the parliamentary verdict by the nation, form one of many instances which vindicate this position.

Turn to the chapter on the advantages of parliamentary government: Lord Grey enumerates five cardinal advantages. The definition is one in which we cannot entirely acquiesce. Parliamentary government, he tells us, "first enables the different powers of the state, to work with harmony and energy." (P. 16). This proposition can be understood, but in a qualified sense. Undoubtedly, the distinct estates of the realm are brought into theoretically and harmonious action. But the whole system of parliamentary government is discord and opposition. "Secondly," he tells us, "it brings the policy of the executive under control and review of the legislature." This is quite accurate. But, "thirdly," he gives us the following criticism, which is altogether irrelevant:—

"It is another great advantage, which may, I think, justly be attributed to parliamentary government, that it renders the contests of men for power as little injurious as possible, and furnishes what seems, on the whole, the best solution hitherto discovered, of the great problem, how to provide some safe mode of determining to what hands the principal direction of public affairs shall be intrusted. Ambition is so strong a passion of human nature, that in every age of the world, in every state of society, and under every different form of government, men have continually carried on, in some way or other, contests for political power. In the old despotisms of the East, the earliest governments of which we have any historical record, open violence, murder, and treason, seem to have played the principal part in these contests. We read of one despot thus wresting the sceptre from another; or the ambitious ministers snatching, by the destruction of their rivals, the power exercised in the name of their nominal masters. Among the semi-civilized nations and tribes of Asia, the same means are to this day employed for the same object, and bloody changes of rulers are of constant occurrence."—(P. 23.)

The obliquity of this criticism cannot have escaped the reader. Lord Grey confuses all distinctions of time, of race, of culture, and of *civil* liberty. And he thence appears to imply, that if we had not *political* liberty under a parliamentary polity, we should be just the same in our notions of government with the earliest

Asiatics, in spite of the incalculable difference presented by our society, before our parliamentary government arose!

The comparison which Lord Grey ought to have taken is not between the modern English and the ancient Asiatics, but between our present parliamentary statesmanship, and the present Continental bureaucracy. Now, if he were to compare the conflict of statesmanship at Westminster, with the conflict of statesmanship at Vienna, he would find the illustration destructive of his proposition. At Vienna there is no lack of aspirants for office. The political service of the state is probably a wider profession in that Empire than in our own, in consequence of the peculiar laws of Austrian society, which narrow the choice of paths to distinction. At Vienna, where there is no such sacrilegious thing as a Parliament allowed, we know neither of "open violence, murder, nor treason." In more intelligible phrasology, we scarcely hear even of intrigue; we except of course, the abnormal condition of Hungary. A minister assumes power, and he holds it during forty years. No rival disputes his pre-eminence. This happened successfully with Kaunitz and Metternich. The present minister has already held office for eight years, and there are those in Austria better qualified, and at least equally ambitious, for his post. Yet no effort is made to dislodge him from power; and, whatever rivalry may exist, is probably quite untainted with personal acrimony. We have chosen the instance of the Austrian Court, as that which is most applicable, from the corresponding stability between the character of the British and the Austrian constitution. Of course, if Lord Grey were to compare the Courts of Paris or Constantinople with our own, we should reply, that the instances were not analogous. In the one case, he would be comparing modern usurpation with old established government; in the other he would be commingling Asiatic with European character.

We have dealt with this subject at length, in order to point out the confusion in Lord Grey's mind, of the different elements of the English character. The author ascribes everything to political institutions, nothing to the prominence of our civil liberty, or to the idiosyncrasy of our original social constitution. A vindication of parliamentary government must rest on very different grounds, if it would be just and effective.

The same inconsistency which attaches to Lord Grey's notions of constitutional reform, applies (and with even greater force) to his views of patronage and bribery. Indeed, it is impossible to draw a single deduction from his arguments on these points. He traces, with much force and perspicuity, the improvement of our political morality since the age of George III. He views this improvement with the satisfaction with which every moralist

ought to regard it. Yet, after commending our reform in these instances, he next luxuriates in the contemplation of the bribery which still exists. Nor only so; he appears to entertain, on many grounds, a preference for bribery in its most direct shape. He looks back with no abhorrence to the times when money bribes were current; and he prefers to see members returned to Parliament by direct corruption, to their return "by the arts of the demagogue." Surely this is the most rampant Eldonism that ever yet existed. We notice these views, chiefly for their singular inconsistency. Why commend the reform which our patronage has already undergone, and nevertheless avow, or at least imply, a preference for the system which Walpole and Newcastle were the last to maintain?

Let us illustrate Lord Grey's conflicting positions. After justly condemning the personal influence acquired by the sovereign half a century ago, as tending unduly to strengthen, or insidiously to undermine the administration of the day, according to the predilections of the sovereign, the author criticises, in the following terms, the system of patronage which existed previously to the Reform Act:—

"The means also by which the ministers of the crown were enabled to command the votes of a large number of members of the House of Commons before the passing of the Reform Bill, *had grown to be very injurious and onerous to the country.* So large a proportion of the whole House was then returned by the influence of burgh proprietors, and other powerful persons, instead of by our really popular election, that ministers were necessarily led to depend for the maintenance of their power, *less on meriting the confidence and approbation of the nation, than on the support of those who possessed parliamentary interest, which too commonly could only be purchased at the expense of the general good.* This evil seems to have been increased (so far at least as regards the burden upon the nation), instead of being diminished by the gradual discontinuance of the practice of giving direct money-bribes to the supporters of the government in the House of Commons; because bribes given in this form, from the votes for secret service, were not really more immoral, and were far less costly, than those, which were accepted in the form of jobs, and of places created, not for the public service, but for the benefit of the holders. But, apart from the means by which it was obtained, the command of a considerable number of votes in the House of Commons, by the ministers, *was highly useful, and its continuance would have been an advantage, as conducing to the firm and vigorous administration of affairs, if it had been preserved in such a manner as to be enjoyed by the advisers of the crown in virtue of their offices, irrespective either of court favour or of those sinister influences, to which they were compelled to submit in order to secure it.*"—(Pp. 97, 98).

The civil service forms so important an element in the general

question of parliamentary government, that it is hardly possible to exclude a brief view of the reform of patronage which has already taken place, from a discussion of the subject. We shall quote Lord Grey's lucid view of the abuse of patronage during the last century :—

“So lately as the reign of George III., not only were places and pensions bartered without shame for political support; but the dismissal of officers in the army or navy for votes given in the House of Commons, was occasionally resorted to, and there were even instances of the removal of public servants from situations now regarded as permanent, for the avowed purpose of punishing their friends and relations, for having pursued in Parliament a line of conduct obnoxious to the minister.

“Formerly the appointment and promotion of naval and military officers was made almost openly a matter of mere favour. No rules existed prescribing certain periods of service in the lower ranks of the army and navy before the higher ones could be obtained; and nothing was more common then to see men rise through political influence to the command of regiments and ships of the line, with scarcely any service or knowledge of their profession to recommend them. There are now very strict rules as to the time that officers must serve in different ranks before they can be promoted; and it is universally recognised as the duty of those intrusted with the power of the crown, to be guided in the distribution of promotion and professional employment in the army and navy by the rules of the service and the merits of officers.”—(Pp. 159, 160.)

We turn from this picture of glaring abuse, which we believe to be accurate, to Lord Grey's view of the change that has gradually been introduced during the last forty years :—

“A ministry, even if inclined to act corruptly, would no longer dare to abuse the military and naval patronage of the crown for that purpose, since it is certain that far more would be lost than gained in the attempt.

“The change which has taken place is not confined to the army and navy. The civil patronage of the crown has been greatly reduced by the many economical reforms effected since the peace of 1815, and especially since the reform of Parliament in 1832; and some of the abuses, which were formerly not uncommon, have been rendered impossible by the system now firmly established as to the tenure by which all civil offices are held, except what are called political offices.

“In most of the public departments a regular order of succession has been established, so that by far the majority of the higher permanent offices in the civil service are filled up by the appointment of persons who have been gradually advanced to them from its lower ranks.

“Errors of judgment are no doubt frequently committed in performing the very difficult duty of selecting public servants for ad-

vancement; but the most common error, according to my observation, is that of giving undue weight to seniority, and too little to ability and merit, *from fear of incurring the suspicion of partiality.*"—(P. 160–162.)

Here, then, we come back to Lord Grey's inveterate fallacy—the *status quo*! In his original premiss, the flagrancy of corruption half a century ago, we fully acquiesce. To his consequent premiss, the justice of the present system, we unequivocally demur. It is thus that Lord Grey would close the door against further reform in every quarter. And it is an instance, not a little amusing, of the manner in which politicians fail rightly to understand the public reputation which they bear, to read this ingenuous apprehension from a former minister, whose very name had become a byword to signify the most systematic nepotism. The civil servants, who are here distinctively alluded to, undoubtedly rise by seniority, according to a usage which no minister could disturb, without bringing a hornet's nest about his ears. But this class involves but a very small section of the appointments which, before the introduction of the examination system, were in the unconditional gift of the minister of each department. The clerkship in all the offices rise by seniority; and it is impossible for any minister to claim credit for not disturbing an established custom. But the original appointments to those very clerkships—and the appointments to all other posts which are stationary and not progressive—rest with the minister; and we have yet to learn that any minister—most especially Lord Grey—has enjoyed the repute of bestowing them according to any strict sense of duty. It was commonly said, with a certain exaggeration which simply springs from the real foundation of the statement, that when Lord Grey presided at the Colonial Office, nearly every person in authority throughout the colonies, bore his name.

It is not surprising that this conflict between reasoning and preconception, should bring Lord Grey into an indefensible position. Where he writes as a speculative politician, his deductions are just and sound. Where he writes as a prejudiced bureaucrat, they are wholly irreconcilable with his first position. Ready to disavow iniquities that are gone by, and yet anxious to retain corruptions that survive, he is, of course, directly opposed to the great question of Competitive Examinations. This subject is directly allied with Lord Grey's argument on a "strong Government." He would, at this day, strengthen government at all costs; and he would, therefore, preserve patronage, unshackled, as an element of parliamentary corruption. Now, we have already said that we hope to witness the introduction of a scheme of reform which, while it shall free the House of

Commons from the influence of faction, shall also dispense with every pretext for the necessity for any other ministerial support than may be given by members of the House of Commons on intrinsic grounds. No argument can then survive for the exclusion of merit as a claim to public employment.

But let us note how Lord Grey shifts his ground when he approaches the subject of Competitive Examinations. He here opposes the alienation of the present patronage of government, on the ground that it will abolish their privilege of giving rewards :—

“For these reasons it may well be doubted whether a better class of public servants than we now have would be now obtained by competitive examinations; and I do not hesitate to express my decided opinion, that another, and probably the principal object aimed at by those who recommend them—namely, the reduction of the patronage of the government—would be productive of injury instead of advantage to the nation. No government can adequately perform its functions unless it possess the power of reward as well as that of punishment; since, if punishment is necessary to enforce obedience to its commands, reward is the great instrument by which it can call forth zealous and able services.”—(P. 179.)

Lord Grey here confounds the whole principle in dispute, and begs the whole question at issue. We will first, however, attempt to dissipate the doubt which rests upon his mind, whether the class of civil servants which we shall obtain by means of competitive examinations will be superior to those which we already possess, by simply pointing out to his lordship's notice, that under the ordinary “pass” examinations which have lately been established, *nearly one-third of the nominees of government have been excluded for total incompetency.* It is to be presumed that an equal proportion of incompetents were actually appointed previously by the “pass” examinations. If an ordinary examination produce this beneficial scrutiny, *à fortiori*, a competitive examination will do so.

Passing, therefore, from the refutation of this fundamental fallacy, we turn to Lord Grey's position on the subject of giving “rewards.” Now it happens that this author has just before, as we have shown, defended government patronage on a ground entirely antagonistic to that of giving rewards. He has defended it on the ground of *corruption*. He has asserted, too, that the “whole strength of government” rests in the exercise of its patronage with a direct view to parliamentary support. If there is this enormous incentive to the corrupt exercise of the patronage which ministers hold, what security can exist for the faithful recognition of national services, and for the distribution of rewards?

But apart from the just apprehension—which daily experience tends merely to strengthen—that patronage retained under the specious plea of rewarding merit, will be diverted to the purpose of securing parliamentary support, the fact is, that even if no such apprehension existed, there would be no argument against competitive examinations. Lord Grey's great error on this point rests in the fact, that he commingles all classes of patronage. The hypothesis of "giving rewards" is so happy a plea for the maintenance of patronage, that its author fails to perceive that civil offices are already marked out into classes which admit of the attainment of both objects. We may, perhaps, divide government patronage into four classes. There exists, first, that class, the duties attached to which are simply mechanical. This is the lowest grade of official employment. We would, therefore, leave this class of patronage in ministerial hands. Indeed, it would be impossible to subject candidates for these posts to any examinations which could be a test of their competency. The second and intermediate class of patronage is, that vast class of subordinate offices which is made the chief means of parliamentary corruption. This class includes the clerkships of all revenue departments, and a great variety of other such offices under the control of the Treasury. These are offices in which subordinate mental qualifications are required. The third class of patronage differs from the second only in the fact that it is chiefly distributed, not for parliamentary support, but for private friendship. These are the corresponding subordinate offices in each of the departments not connected with the Treasury, and they are in the gift of the minister of each department.

These two classes of offices are pre-eminently such as ought, in a great degree, to be open to competitive merit. There is no reason to restrict the government from the right of patronage in some instances. But what renders Lord Grey's argument on the subject of "rewards" pre-eminently inapplicable, is, that these are offices which can scarcely ever be bestowed with such a view. These are offices, chiefly rising by seniority, and conferred originally on young men of twenty, who have served in no other public capacity, and have no other merit than competency to prefer.

The fourth class of offices,—or those of a more valuable kind, such as Commissionerships and Secretaryships—is the only one to which Lord Grey's argument can refer. And we believe that, as a matter of fact, this class of patronage has less frequently been prostituted for parliamentary support. It would be difficult, too, to institute competitive examinations for men of mature age, and who commonly are either barristers of a certain standing, or men possessed of some real guarantee for their ability, which has

served to recommend them to the minister of the day. We could point, for example, to three well known writers, who, during the last two years, were appointed to high civil offices through the agency of the late Chancellor of the Exchequer, "with a love for the craft." If therefore the highest and the lowest class of patronage were allowed to remain undisturbed, the remaining classes might be redeemed from nepotism and parliamentary corruption, without appreciably lessening the privilege of government in giving rewards.

It probably has never struck Lord Grey, who regards patronage as the vital element of administrative stability, that, if it were once known that government possessed no patronage, members of the House of Commons would soon cease to expect any such reciprocity for their votes. Where nothing exists, nothing can be demanded. Nor does it appear to us, by any means probable, that the cessation of this recompense to members of Parliament for their votes, would at all affect the fidelity of their support of the minister. When constituents are aware, that a certain patronage is to be obtained for them, by their representative, in return for parliamentary support, they will of course press their demands upon him. And it is in consequence of *their* solicitation, that he makes his support of the minister a covert bargain. But, when those constituents know that offices are given, not by jobbery, but by merit, they will educate their children in place of jobbing with their representative.

What is not less conclusive against Lord Grey's view of the necessity of parliamentary corruption, is the fact, that it has always been partial in its operation. Members of Opposition have been excluded from all share in ministerial patronage. Yet, it happens that, except in peculiarly adverse circumstances, a leader of opposition keeps his party together, nearly as well as a leader of the government.

The truth is, that the moral improvement of politics has always been in arrear of the moral improvement of society. Where government reforms, it reforms under the pressure of a great social change. This improved morality first rose up against the open corruption of money-bribes. Such a reform, it might easily be shown, was vigorously disputed a century ago, by men equally in arrear of their generation with Lord Grey. The changes made by Parliament since the peace of 1815, have been the result of the same external pressure. It is hardly surprising, therefore, that when society in our own day, rises against the venality which we have witnessed, and indicates new methods by which government may be sustained, a champion of the old system rises in the old panoply. Lord Grey, indeed, here solves the problem against himself. He tells us, with great candour,

that money-bribes are "less costly," and "less dangerous," than bribes of office. But the country has long decided against money bribes. Therefore, by the plainest induction, it has decided virtually against bribes, even more "costly" and "dangerous."

There is a second class of corruption, which assumes too great a prominence in Lord Grey's work, to admit of our passing it in entire silence. Corruption, briefly distinguished, is of two kinds—that which takes place within, and that which is maintained without, the walls of Parliament. There is the bribery of representatives with office by ministers and their supporters, and there is the bribery of constituents with money, as well as office, by candidates for seats in Parliament. The logical process by which the law arrives at the declaration, that the one kind of bribery is moral, and the other immoral, is certainly by no means clear. But we take the law as we find it; and Lord Grey, who supports the in-door corruption by means of patronage, views with a strange leniency the out-door corruption by means of votes. It is true that the author maintains that "one of the objects of the new Reform Bill undoubtedly ought to be, to guard as far as possible against corruption." But he goes on in the same breath to ridicule the bribery laws, and plainly to avow his preference for bribery as compared with "demagogue arts:"—

"It would be a delusion to flatter ourselves that this can be easily accomplished, or that the evil can be eradicated by penal laws, such as that which was passed a year or two ago against bribery. Little advantage can, I think, be anticipated from legislation of this kind. The penalties of the new Act are very severe, and it gives powers of a highly inquisitorial character for the detection of the offence; but it does nothing either to diminish the desire for seats in Parliament, in men who are willing to spend large sums of money to attain them, nor yet to take away, from those who have the power of disposing of these much coveted seats, their inclination to make this privilege the means of advancing their own private interests."—(P. 117.)

As it would appear from this paragraph, that Lord Grey has in view some more effectual preventative against bribery than that of a penal law, it is greatly to be regretted that he should hoard his secret. Until the country is favoured with a revelation of it, we believe it will not rescind that penal law. Indeed, if Lord Grey had thought twice over this proposition, he would hardly have asserted that the Act against Corrupt Practices was inoperative, since that Act is our sole protest against an immoral bargain for a seat in Parliament, and since it affords the defeated party a means, which their very instinct prompts them to adopt, of scrutinising the sources of their opponent's majority. An Act under which it was ascertained last year that Mr Neate's election for the city of Oxford had been attained by the bribery of 170

voters, under the guise of electioneering paid messengers—an Act, under which it was ascertained that one of the members for Ipswich had obtained a vote by allowing a tenant to hold his tenement without rent until after the forthcoming election—(and these are mere illustrations of its general operation) can hardly be regarded as inoperative.

It is vain, therefore, to decry the Bribery Law, either as a theoretic protest or as a practical bar. No doubt, the law may not meet all contingencies: what law ever did? But it is clear that, without its aid, Parliamentary government would soon become a sink of corruption which would destroy its own existence.

But the following passage contains the gist of Lord Grey's opinions on the subject of bribery:—

“To give money bribes to electors is not worse, or rather not nearly so bad, as to court their favour by flattering their passions and prejudices, and by encouraging them knowingly in mischievous political errors. More guilt is incurred, because far greater injury is done to the nation, by having recourse to the arts of the demagogue, than by the illicit use of money for the purpose of carrying on an election; and at the present moment the former abuse seems more common than the latter.”—(P. 120.)

We will not do Lord Grey the injustice to suppose that he really would prefer to see every seat in Parliament bought by wealthy electioneers, rather than see “demagogues” insincerely declaiming from every hustings. This, however, is the literal meaning of the paragraph we have just quoted. But there is even a prior objection to be taken to this argument. Lord Grey implies that the wealthy class and the demagogue class, are necessarily opposed to each other. This we gravely doubt. Demagogues, as we have often seen, can obtain plenty of money when they aggregate for any distinct political purpose; and they are peculiarly the class who would devote the wealth they might possess, to political objects. It may be questioned, therefore, whether the same class of men who now appear on the hustings as demagogues, would not, if the bribery laws were swept away, re-appear (and with substantially the same opinions) as corruptors of the constituency by bribes. We believe, also, that the British people are too well alive to the influences of education, to experience the danger which Lord Grey apprehends from the oratory of prejudiced and superficial declaimers.

Thus far we have followed Lord Grey through his exposition of the principles of Parliamentary Reform. Its practical value, as a subject of criticism at this time, rests upon the directness of its application to the forthcoming Parliamentary Reform Bill; and we have endeavoured to choose those subjects for inquiry which bear the closest relation to the expected measures. Now

that we have thus far glanced at the salient characteristics of the existing system, we propose to point out the classes of reform which are peculiarly urgent.

Whatever may be the extent to which a discussion of this question may be carried during the present session of Parliament, it is at any rate clear, that the measure will become a great point of party strife. Lord Grey, indeed, plainly ignores this certainty. He writes with the *naïveté* of a cloistered theorist, who had never mingled in Parliamentary discussion :—

“If I might hazard a suggestion on the subject, I would venture to recommend that the Queen should nominate a committee of her Privy Council, composed of members taken from different political parties, to consider and report what measures of reform ought to be adopted.”

Unfortunately, we are not living in an eutopian age, in which men desirous of power will forego their prospects in so self-denying a manner; and it is surprising that a statesman, whose notions of parliamentary patronage run so fixedly in the old ruts, should thus ignore a ground of party strife which has been so long anticipated. It is true that Lord Derby's declaration for further reform has apparently committed all parties to the general principle. But we doubt very much whether Lord John Russell is prepared to adopt the same views of the direction which this reform should take with the present ministry; and we doubt still more, whether the Whig party in the House of Commons have not already pre-determined to eject the Conservatives from office on this very question. At any rate, it is clear that Lord Grey's proposal would be no more allowed, if adopted, to circumscribe party action, than the German Federal Council at Frankfort succeeds in circumscribing the policy of each component State.

Indeed, it may almost be said, that parliamentary war has already been declared on this subject. Last year Mr Disraeli, at a “farmer's ordinary” at Newport-Pagnell, announced his determination to seek, in the expected measure, a mode by which the Conservative party might recover a portion of their lost influence in the House of Commons. Since his accession to office, he has but equivocally denied the statement charged upon him by another member of the House, “That the Reform Act of 1832 was a gross Whig job.” Lord John Russell, in retort, went so far as to say, that “he had no sort of confidence in a Bill of the Right Hon. Gentleman's concocting.” It is pretty clear, therefore, that we have not yet so far shaken off the tradition of party warfare as to bind ourselves to Lord Grey's scheme.

There is good reason to believe that a new reform, accom-

plished at this time, may possess the character of finality, which Lord John Russell vainly hoped that he had impressed upon the Act of 1832. The period is one in which there are no democratic passions to satisfy, and no inveterate prejudices to contest. The national reasoning on this question appears equally calm and just. What is proposed is, to rectify the defects in our constitution, which the nation perceives with an unbiassed judgment, and with the experience of a quarter of a century since it underwent its last reform. Indeed, the practical lawyer can wonder even less than the politician, at the necessity for a revision of the Reform Act. He is well versed in the defects of nearly every modern Act of Parliament; and he knows that there is scarcely a single Act introducing any important reform (even where no party feeling has arisen to distort its provisions), which has not been amended by an auxiliary Act, within a much shorter period than intervenes between our own day and the year 1832. While there are necessarily many points which will be chosen for a trial of party strength, there are, we believe, others on which all classes now entertain more unanimous, though less strong convictions, than ever were entertained in 1832.

What we apprehend to be now requisite, is at once to render the House of Commons a more exact reflex of the social estate than it is at present; and to correct the inequalities of the representation, without increasing the democratic element. Now the distinctive enfranchisement of the EDUCATED CLASSES is just that principle which will absolutely harmonise with, and will, in a certain degree, satisfy both these conditions. Perhaps the justice and the moderation of a demand for reform taking this shape may be assumed, if only from the fact, that the Primate of all England is at the head of this class of Parliamentary Reformers. Our readers may probably remember the Memorial lately signed by nearly every person of intellectual consequence in Great Britain (the Archbishop of Canterbury at their head), praying for the enfranchisement of those who possessed distinct claims on the score of education. We believe this to be the most popular of the subjects into which the question of reform now divides itself. We shall first, therefore, endeavour to show the relation of this principle to the principle on which the Reform of 1832 was based.

It was, in our view, the cardinal error of the Reform Act, that it recognised conditions of enfranchisement by much more uniform than had any correspondence in the character of the people. Throughout the boroughs—in other words, throughout the major part of the constituencies—it established a nearly uniform *ten pound* qualification for the suffrage. There is no doubt that, by this principle, the authors of the Act endeavoured

to recognise educational qualifications. It was obvious, that a person renting a house of this value, had a certain visible interest in his borough; but it was presumed, also, that such a person possessed a certain invisible qualification on the score of education. The occupier, therefore, of a house rented at ten pounds a year, was held to be, in a certain degree, educated, as well as to have a certain material interest at stake.

But there were here two questions to be solved: Is this qualification a sufficient guarantee for the amount of education which may be deemed requisite for an election? and if it be, Do the visible and the invisible qualification (the householding and the instruction) so far coincide, that nearly every educated person would fall within the class of householder? Now, we shall not quarrel with the decision of the Reform Act on the first of these questions. We are ready to acknowledge that by far the greater number of instances of venality, which have been brought to light in borough elections, have implicated the freemen, who have continued to vote under the old system, without reference to their householding. The class of ten pound householders, however, though they have undoubtedly been by much less venal, may not have by any means comprised the more educated of the middle classes. But it may be gravely doubted whether the Government of the late Earl Grey really expected this class to consist of decently educated persons, according to the theory of their legislation. For in a speech of Lord Chancellor Brougham, when the Reform Bill was before the House of Lords, it was admitted that *it was the original design of the government to limit the borough franchise to "twenty pounds;"* but that they were compelled to deviate from their intention, by an apprehension that the proportion of electors to inhabitants would, in that event, be so small, as virtually to transform the large boroughs into Gattons and Old Sarums. This statement does not appear to us to have attracted the attention which it merits; for it is a confession that Lord Grey's Government halved their intended qualification for the suffrage, on grounds which had no reference to education; and, indeed, it implies, that they abandoned the educational element of the question in deference to popular agitation.

It will be seen that this concession has a direct reference to the proposal made by Lord John Russell, when the organ of Lord Aberdeen's Government, in 1854, to reduce the borough qualification from *ten* to *six* pounds. This proposal was probably the dictate of a compromise between the Liberals, who were generally desirous of retaining the L.10 qualification, and those who attempted to reduce it to L.5. Lord Palmerston's cabinet, however, subsequently announced themselves, through

a semi-official channel, averse to a reduction of the L.10 qualification.

We have indicated, then—in answer to the first of the two questions which we suggested a moment ago—that, even now, the L.10 qualification, introduced in 1832, barely affords a guarantee of the educational competency of the elector. We turn, then, to the second question, and unhesitatingly answer, that the householding and the educational qualification do not by any means coincide; insomuch, indeed, that it is the tendency of the present uniform law to exclude a large proportion of those who are better qualified for the suffrage, by their education, than those who now enjoy it, in parallel stations of life.

We here would indicate two classes of defects in the representation. First, it happens that a large proportion of moderately educated men, and a certain proportion of even highly educated men, are not householders. They are, therefore, *ipso facto*, excluded from the representation; and, under the present system, the greatest *littérateur*, or the greatest lawyer in the country (if he did not happen to be a Master or Doctor in the Universities of Oxford, Cambridge, or Dublin, and chose to live in lodgings in London or Edinburgh, in preference to living in a house of his own renting), would have no vote whatever. Meanwhile, every publican renting a tenement at L.10 a year, would possess the electoral right, from which the most learned men of the day might be excluded.

It is only in extreme cases that such defects can be exceptional. We have said that the proportion of non-householders with greater intelligence and education than the L.10 householders, is very large. It is to be feared, however, that when we commence actual legislation on this subject, we shall experience some practical difficulty in conferring and restricting the suffrage *where there is no definite and visible qualification, by which we may generically demark the enfranchised from the excluded candidates for an educational suffrage*. At the same time, it is to be borne in mind, that the tendency of our social reforms favours the formation of these distinctions. The recent institution of the Cambridge “Middle Class Examinations” illustrates this tendency. It will be for the minister charged with the Bill to determine in what manner he may best give expression to this demand.

The question, however, of the educational classes to be enfranchised, is bound up with the second class of defects in their representation, which we have not yet indicated. This we regard as consisting in the want of *separate and distinctive* enfranchisement. With the exception of those voting within the three enfranchised universities, nearly every highly educated man who may vote under some material qualification in the borough or

county suffrage, finds his opinions swamped, whenever they may be distinctive, in virtue of his education. There is, therefore, in such cases, no representation of his educational opinions. Barristers, for example, occupying chambers in the Inns of Court in London, each hold a vote, in virtue of their occupation, for the borough in which the Inn may happen to lie. But it is morally certain that their opinions are swamped among the thousands of ten-pound householders associated with them in each constituency. We say, therefore, as a *second* objection to the present state of educational representation, that, not only is education not recognised apart from a household qualification, but even where highly educated men possess the suffrage in the capacity of householders, their opinions are wholly lost in the mass with which they are mingled.

It is clear, therefore, that while we must enfranchise educated men *as such*, we must also (in some instances at least) give force to their enfranchisement by enrolling them into separate constituencies. This expedient, be it observed, must be carefully restricted to the higher classes of education, on the immemorial principle so long maintained by, yet so strangely restricted to, the Universities of Oxford, Cambridge, and Dublin. Lord John Russell wisely proposed, in 1854, to enfranchise the four Inns of Court in London. The expected measure cannot fail to make good this proposition. But why should the educational representation be arrested here? Why not enfranchise also the Universities of Edinburgh and Glasgow? Why not also associate less important seats of learning into federal representation, just as the constituency of second class boroughs is frequently swelled by its union with that of contributory boroughs around it?

We apprehend that, by this process, we shall fully satisfy the demand for educational enfranchisement of the *higher class*. The incidental hardship already felt by those absent from their universities, who must either travel to Oxford, Cambridge, or Dublin, or must forego their votes, is as much a question of detail as that of the academical standing which shall give votes within the university. This hardship may be rectified, by simply allowing each elector to vote in any part of the United Kingdom by deposition before a justice of the peace. The next question, therefore, which presents itself, is that of the mode in which the lower class of education is to be recognised in a new Reform Bill.

We have already said that, under the L.10 suffrage, there exists, theoretically, a double qualification, of which the one is express and the other implied. In other words, the direct household qualification presumes educational competency. Now, in the same manner, an educational suffrage may afford in theory just this double qualification in an inverted form. The direct

educational qualification would itself presume the existence of certain material interests: for a person who has been educated, to a certain degree, may be supposed to be in equal pecuniary circumstances with a L.10 householder. It is on this ground that, while we desire the establishment of an educational suffrage, we hope to witness the suppression of the freemen, who hold electoral rights independently either of the houses they occupy or of the education they have received. The class of freemen is probably the most ignorant, and, if not the poorest, certainly the most venal, of all those which hold any distinct rights in the State. The reports of each election committee abound with details of their corruption. We have frequently found that they have organised themselves into bodies, with a view of forcing their mercenary support on candidates for the representation who may prefer bribery to defeat. We do not forget the ill-success which attended the efforts of Lord Melbourne's Government to disfranchise a large proportion of the freemen. But we believe that public opinion has widely changed on this subject during the last twenty years.

We apprehend that the class of "skilled artisans" will form one of those on whom it will be resolved to confer some electoral rights. Their intelligence, and the high wages they receive, justify the popular desire that the better class of them should be included in the representation.

Educational enfranchisement may be taken as illustrative of the inevitable tendency of the forthcoming reform to accept the general principles of the present constitution of Parliament, and to vary simply its detail. The broad distinction between the Reform of 1832, and that which is now anticipated, is ably drawn by Lord Grey in his ninth chapter:—

"The great differences between the circumstances of the present time and those of 1831, ought not to be overlooked; nor the fact that, if another Reform of Parliament is now needed, it is not for the same reasons, and ought not to have the same objects, as the original Reform Bill.

"I make this assertion with confidence, because, even in the speeches of the most violent advocates for the passing of a new Reform Bill on democratic principles, I observe that few attempts have been made to show that the existing distribution of power has led to any injustice to the humbler classes of society, on the part of the Legislature. Far from this having been the case, it is notorious that Parliament, of later years, has shown in all its measures, and especially in its financial measures, a most anxious desire to promote the welfare of the working-classes. These are facts of which it is most material that we should never lose sight, in considering the question of a new Reform Bill; since the only sound principle on which constitutional changes can be attempted, is that of directing

them to practical improvements of the Government, *and to the removal of evils that have been felt*, not to the gratification of men's passions or their love of change. But, if this principle is recognized, it follows that a new Reform Bill ought not, like the former one, to aim at the transfer of a large amount of political power from one class of society to another, since this is no longer necessary, in order to protect the general interest of the country from being sacrificed to those of a minority of its members."—(Pp. 126–28.)

We entirely concur in Lord Grey's view of the auxiliary character of the reform which is now requisite, though his concurrence in further reform of any sort is quite inconsistent with what we have before criticised; and we will deal with the existing representation in Scotland, as the most convenient illustration both of the changes and of the anomalies of the existing system.

It was in Scotland that the political agitation of 1832 was probably least intense; yet it was in Scotland that the most sweeping constitutional changes were introduced. In that country, the proportion of the constituents to the population was but *one in a thousand*. The nation then numbered 2,500,000, and the electors then consisted of 2500. The proportion of the constituents to the population in Scotland is at this day about *one in thirty-two*. The nation now numbers rather more than 3,000,000, and the electors now consist of nearly 100,000. In the whole of Great Britain, the proportion of the constituents to the population is at this day about *one in nineteen*. The registration of 1857 enrols 1,045,000 electors, from a population of about 20,000,000. Even in England, after the suppression of several classes of electors who possessed no just title to the suffrage, the representation was fully doubled by the Reform Act. The difference in the aggregate number of members returned by either country was inconsiderable; and in Scotland the representatives were simply increased from 45 to 53. But those representatives were thenceforth elected by nearly the whole middle class: they were previously the mere delegates of clanships in the counties, and of bureaucracies in the burghs. In the counties the old parchment freeholders implicitly followed their lord to the poll, and the constituency depended on a quasi-feudal claim of superiority, without reference to the possession of land. In the burghs, the elections rested with the self-elected town-councillors. This system, as our readers know, was replaced by the following arrangement:—The county electors were divided into two classes, namely, the owners of property of the yearly value of ten pounds, and the fifty pound occupying tenants. The burgh electors, with the exception of incidental anomalies, were all ranged under the class of ten pound householders.

This change, and the lapse of a quarter of a century, have together swelled the Scotch electors to a number *by forty times more numerous* than before the Reform Act.¹

¶ This hasty glance will suffice to indicate that the great work of *constitutional development* is already accomplished, and that the character of a new reform can be auxiliary alone. Although the illustration of Scotch reform may be an extreme one, the uniformity of the existing system throughout the United Kingdom, renders it generally applicable. We may therefore briefly pursue the illustration, by reviewing the anomalies in the distributive arrangement of the representation in Scotland, as generally incidental also to the whole representation of the United Kingdom.

While all sections in either House will concur, without doubt, in giving increased representation to INTELLIGENCE, it is probable that the relation of the county to the burgh representation will form the principal ground of party contest. It is certain that the Reform Act did not attempt to measure justice to these two great divisions of the population. Under the old system, there were in England three distinct classes of members. There were the county members, the *bonâ fide* borough members, and the nomination members. Of these, the latter were the largest division. The Reform Act, in sweeping away the nomination seats, with few exceptions, assigned the vacated places to the two former classes. The county representation in South Britain was increased from 94 to 159 seats. The *boni fide* borough representation was apparently increased from 264 to 341: from 141 nomination seats were suppressed, out of the total number of 405 borough seats of all descriptions existing for South Britain under the old constitution. At the expense, therefore, of 141 nomination seats, 65 seats were added to the counties, and 77 to the boroughs, in that country.

It was hardly to be expected that when democratic feeling ran so high, and the boroughs had so long sustained injustice, a greater concession should have been offered to the counties. It has been frequently maintained, however, by political partisans, that the Reform Act virtually diminished the representation of the counties, inasmuch as they were indirectly represented in the nomination seats. But this is a very doubtful assumption. It is very questionable whether the classes now enfranchised in the counties would generally side with the nomination holders in opinion, for these classes already profess more liberal opinions than the Conservative Peers. It must be remembered also, that it would be impossible to calculate the proportion of nomination boroughs

¹ The Scotch Corporation Reform Act equally changed the municipal constitution of the burghs, by rendering the Parliamentary electors of each burgh its municipal electors also.

which were habitually bought by the unfranchised towns; and that the Whig Peers, who held a certain number of boroughs, used them in the interest of the towns.

Nevertheless, the fact remains, that the borough population, in either country, is more largely represented than the county population, in a proportion of about *two to one*. In Scotland, where the change has been most sweeping, the injustice in the apportionment of town to country representation, is singularly least striking. There are twenty-nine members for counties, and twenty-four members for burghs. Meanwhile, there is a population of 2,000,000 represented by the twenty-nine county seats, and a population of only 1,000,000 represented by the twenty-four borough seats. But in England and Wales the disparity is greater. There are there 159 county, and 341 borough, seats. The county seats represent (according to the census of 1851) 10,980,000; while the borough seats, more than double in number, represent only 8,520,000. Some deduction from this immense disparity is to be made for those contributory boroughs which are united with larger boroughs, and are by position too distant from them to be included in the census of the principal boroughs. But, after this deduction, the disproportion would probably be found to approximate from two to one.

These figures are conclusive against the demands of that party which seeks to increase the proportion of borough representation; and there can be no doubt that if Mr Disraeli, as leader of the House of Commons, should attempt to carry out his cherished scheme of increasing the county representation, he will have the best of the argument, although the effort may, possibly, cost him his office. It is also to be observed, that England is more largely represented, in proportion to its population, than Scotland. Five hundred English and Welsh members are returned side by side with only *fifty-three* Scotch. The Irish, it is true, are still more disproportionately represented than the Scotch, if population be the index of representation. But in Ireland, there are good reasons, on the score of religion, of intelligence, and of wealth, to destroy the test of numbers. Though Ireland, with *two-fifths* of the population of England and Wales, returns but 105 members to Parliament, there is no doubt that the class designed by the Reform Act to possess the suffrage, are, in proportion to the number of members, by much smaller than in Scotland. And as it requires no national egotism to believe that the Scotch are also, viewing them collectively, the most intelligent and the best educated of the three nations, it seems to follow, that Scotland possesses a pre-eminent claim to benefit by the expedient of educational enfranchisement, of which we have already treated.

We now pass from the question of *constituencies* to glance at that of *constituents*. There is a growing and, abstractedly, a just desire to equal, or at least, to approximate, the qualification for the suffrage in town and country. The Liberals loudly inveigh against the injustice of the "Chandos clause," which raised the county suffrage in the case of all "occupying tenants" to L.50, while the suffrage in the borough does not exceed L.10. We are ready to acknowledge that the injustice may be equal to the disparity. But the *extent* of the evil has been absurdly magnified. The complaints against this inequality indicate, that the "occupying tenants" are, at least, a large proportion of the county constituencies. No assumption can be more incorrect. We assert, on authority of the tabular views contained in the returns presented to Parliament during the last session, that the number of "occupying tenants" in each county, is, on an average, not more than *five per cent.* of the total number of constituents. It is true, that the class of lease-holders is divided into sections, of which the one is restricted to a L.50 qualification, while the other votes by the same L.10 qualification as the borough constituents themselves. The distinction between the two classes of lease-holding electors rests in the period of their leases. But if we add the L.50 lease-holders to the occupying tenants, the aggregate number of L.50 franchise holders does not exceed *fifteen per cent.* on the aggregate of the county constituents. The truth is, that the proportion of 40s. freeholders, in consequence of the subdivision in the ownership of the soil by political societies, is at this day so vast, that the Reform Act is now (paradoxical as the assertion may appear) nearly inoperative in regulating the constituencies of the English counties.

But one of the most important aims of a new Reform Bill, must be that of increasing the intelligence of Parliament itself. There is no doubt that in this respect the predictions of the Reformers of 1832 have been wholly falsified. It was confidently predicted, by these politicians, that the newly enfranchised boroughs would introduce rising talent. Although it may be thought a mere assumption of foresight to question such a prediction after the fact, we scarcely perceive on what ground it can have been entertained. The immense depreciation of parliamentary talent during the past quarter of a century, is a matter of fact beyond all dispute. Where is the Pitt, the Fox, the Burke, the Sheridan, the Grattan, and the Canning of this generation? Government, throughout this period, has been intrusted to mediocre peers, and baronets of wide estate, because no young men of genius alone can find their way into the House of Commons. This, we fearlessly assert, is the mere result of the suppression of parliamentary patrons, who were wont to encourage rising

talent. Now, it is quite clear that the boroughs could never supply the function of the nomination holders, in spite of the confident assertion of Lord John Russell in 1832. The boroughs have even preferred their own municipal worthies to those whom they have known to be capable of aiding in the government of the country. But if they had not been marked by this prejudice, it would obviously be very difficult for the boroughs to be acquainted with the talents of any man who had not already served his apprenticeship in some other seat. A youth of two or three and twenty, who has never moved in public life, can by no possibility be known to the constituency of a great borough; but his fitness for a seat in Parliament may be well discerned by a single nomination holder, with whom he may be acquainted. The increase of the great borough system has thus obstructed the introduction of rising talent, partly by prejudice and partly by sheer necessity.

We confidently look forward to the adoption of distinct educational enfranchisements, as one of the most available means at our disposal for the regaining of the beneficial effects which formerly accrued from the nomination system. In destroying the abuses of that system, we made, in 1832, no effort to preserve its incidental advantages.

As it has been our aim, in those observations, to deal with principles rather than with details, we shall not enter at any length into the minor questions of the relation of parliamentary seats to political offices. It has, for example, been proposed to make two great innovations upon usage. It is suggested that the law officers of the crown shall have a right, *virtute officii*, whether previously returned by any constituency or not, to speak in the House of Commons, and that members taking office shall not thereby vacate their seats. No doubt, these clauses would be very convenient for the ministers of the day. They would discourage noisy lawyers from entering the House in quest of advancement; and ministers would be subjected to no contingencies in themselves taking office.

It has been argued, on the first of these points, that the best lawyers are often not members of the House, and that government is compelled to accept the service of indifferent legal advisers. It happens, however, that the law officers are employed hardly less to defend the ministry in debate than to advise them behind the scene. The best lawyers are sometimes the worst debaters; and the presumption is, that an eminent lawyer, who speaks with effect, will enter the House for the development of his rhetorical powers. It is recorded of Lord Eldon, that he once said to George IV., of a great Chancery lawyer, who was a cripple, wrote an illegible hand, and could

rarely deliver himself of an intelligible proposition except on paper, "the greatest lawyer in your Majesty's dominions can neither walk, nor write, *nor speak*." Such an adviser would hardly serve the purpose of an administration in the House of Commons.

We ourselves regard the necessity of re-election on the acceptance of office as the only precaution which a constituency possesses, under septennial Parliaments, for the conformity of its representative to the principles which he has advocated from the hustings. We know of no other preventative to the acceptance of office, and its tenure perhaps for four or five years, by any member, in direct opposition to his professions towards his constituents. And, we think, that a reversal of this law would open the door of corruption in various ways. No doubt, like every other law generally beneficial in its operation, it betrays incidental inconveniences.¹ While, however, we would urge the country to oppose the rescinding of this condition, we should cheerfully acquiesce in a revision of the complicated rule under which each minister, who exchanges one office for another, places himself under the same necessity of re-election, with the ministry who takes office anew.

We have here attempted to glance at the leading questions which now arrest public attention on the question of parliamentary reform. We part from Lord Grey, we hope, in courtesy, and, we are sure, in good will; and we trust that the example which he has set in the theoretical discussion of a political question of the day, will be followed, though with more earnest thought and more careful research, by other politicians to whom the country is equally predisposed to attend.

¹ The refusal of office by Sir E. B. Lytton, under the present government, from a fear of defeat at the hustings of Hertfordshire, is a striking instance of this casual disadvantage.

ART. VII.—*The Collected Works of Dugald Stewart, Esq.*
Edited by Sir WILLIAM HAMILTON, Bart. *With a Memoir of Dugald Stewart.* By JOHN VEITCH, M.A. Vols. I.—X., 1854–58. Edinburgh: Thomas Constable and Co.

EVER since the decease of Dugald Stewart, now nearly thirty years ago, there has been a strong desire felt by many to have a memoir of him. This feeling has rather been increased by the circumstance, that those who never saw him have been able to form a very dim idea of the man, and of his character. He ever flits before our phantasy as an author or a professor; we see him walking up and down, cogitating a lecture, or dictating an essay; or we get a glimpse of him gliding through the college courts, or addressing a reverential body of students in the classroom. He is not one of those authors who throw their individual heart into their writings, so that their works are their fittest memoir. On the contrary, he keeps himself at a dignified distance from his readers, and seldom lays aside his classical stateliness.

It seems that his son, Colonel Stewart, had prepared an account of the life and writings of his father, together with his correspondence with eminent individuals, and anecdotes from his journals. But, during his military service in India, Colonel Stewart had suffered from an attack of *coup-de-soleil*, which affected his intellect, and, in a rash moment, he committed to the flames the biography, as well as several papers by his father. The following letter, dated Catrine, 1837, to a publishing house which had inquired after this literary property, will be read with a melancholy feeling, as coming from the son of such a sire, and as illustrative of a topic on which the father had often dwelt, the dark cloud which for ever settles on the border country of mind and body.

"You need not further trouble yourself on this head, because, finding myself getting on in life, and despairing of finding a sale for it at its real value, I have destroyed the whole of it. To this step I was much induced by finding my locks repeatedly picked during my absence from home, some of my papers carried off, and some of the others evidently read, if not copied from, by persons of whom I could procure no trace, and in the pursuit or conviction of whom, I never could obtain any efficient assistance from the judicial functionaries. As this may form, at some future period, a curious item in the history of literature," etc., etc.

Every one rejoiced, in these circumstances, to find it announced that, in this edition of the collected works, there was to be a memoir

of him by Sir William Hamilton, the metaphysician who occupied in this last age the high place which Stewart did, in a previous age. It turned out that Hamilton was obliged, from failing health, to depart from the idea of writing an original and connected narrative, and was to confine himself to a collection of materials, with notes and observations on Stewart's philosophy; and even this design was frustrated by his lamented death. We are grateful, in these circumstances, that we have now at last a memoir of Stewart by Mr Veitch, one of Hamilton's most promising pupils, and already favourably known by his translations, with notes, of portions of Descartes.

The biographer has taken a high standard, and has reached it. This is no other than the memoirs of Smith, Robertson, and Reid by Stewart himself, who again seems to have taken as his model the *Eloges* of the French Academicians. Still, this dignified and rose-water style of biography is not after all the highest; as Stewart's admiring pupil, Francis Horner, remarks of him,—“his conceptions of character, though formed with comprehensive design, want that individuality to which the painter of portraits must descend.” It is evident throughout this life of Stewart, that the painter has been at pains to collect reminiscences from a variety of quarters, and that he has made a judicious combination of them, but it is just as clear that he has not seen the original. He has given us a wonderfully good likeness; but it is of the professor in his gown, rather than of the man in his inner and domestic life,—his heart—his conscience—and his religious experience. This we suspect is an unavoidable deficiency, arising not only from the want of materials, but mainly from the peculiar character of Mr Stewart himself. It is easiest to seize a likeness when the features are marked; but Stewart's mental character was distinguished for its regularity and its fine proportions, and was without prominences or excesses of any kind. Besides, while Stewart had no doubt a liberal heart, he contrives to keep it very much folded up from our view in his writings, and in any recorded conversations or letters preserved to us. That we should not have a living family portrait is no fault of the biographer, who has done his part with industry, integrity, and judgment, and has given us a memoir characterised by clearness and accuracy of narrative, elegance of style, and a fine philosophic spirit. We rather think that this is precisely such an account as Stewart would have wished preserved of himself, and that he would have shrunk from a more searching anatomy of his inward motives, and declined a fuller narrative of incidents, which might have exhibited his infirmities.

Dugald Stewart was born in the Old College buildings, Edinburgh, on Nov. 22, 1753. His father was Dr Matthew Stewart,

at one time minister at Roseneath, and afterwards successor to Maclaurin in the mathematical chair in Edinburgh, and still known as one of those British mathematicians, who were applying with great skill and beauty, the geometrical method, while the continental mathematicians were far outstripping them by seizing on the more powerful instrument of the calculus. His mother was the daughter of an Edinburgh Writer to the Signet. He was thus connected on the part of his father (and also of his grandfather, who had been minister of Rothesay), with the Presbyterian ministry, and on the part of his mother with the Edinburgh lawyers—the two classes which, next to the Heritors, held the most influential position in Scotland.

Dugald was a feeble and delicate infant. He spent his boyish years partly in Edinburgh, and partly in the maternal mansion house of Catrine, which we remember as being, when we paid pilgrimage thither a number of years ago, a whitewashed, broad-faced, common-place old house, situated very pleasantly in what Wordsworth calls expressively the “holms of bonnie Ayr,” but unpleasantly near a cotton mill and a thriving village, which, as they rose about 1792, destroyed to Stewart the charms of the place as a residence. Stewart entered, at the age of eight, the High School of Edinburgh, where he had, in the latter years of his attendance, Dr Adam for his instructor, and where he was distinguished for the elegance of his translations, and early acquired that love for the prose and poetical works of ancient Rome, which continued with him through life. He entered Edinburgh College in the session 1765-66, that is, in his thirteenth year. We remember that Bacon, David Hume, Adam Smith, Thomas Reid, and many other original-minded men, entered college about the same age; and we are strengthened in the conviction, that in order to the production of fresh and independent thought, it is of advantage to have the drilling in the ordinary elements, all over at a comparatively early age, and then allow the mind, already well-stocked with general knowledge, to turn its undivided energies to its favourite and evidently predestinated field; and that the modern English plan of continuing the routine discipline in classics or mathematics till the age of twenty-two, while well-fitted to produce good technical scholars, is not so well calculated to raise up great reformers in method and execution. What the Scottish Colleges have to deplore, is not so much the juvenility of the entrants—though this has been carried to excess—as the total want of a provision for bringing to a point, for carrying on, for consolidating and condensing the scattered education which has been so well begun in the several classes. But to return to the college youth, we find him attending, among other classes, that of Logic under Stevenson, for two

sessions, that of Moral Philosophy under Adam Ferguson, that of Natural Philosophy under Russel, and from all of these he received a stimulus and a bent, which swayed him at the crisis of his being, and abode with him during the whole of his life.

After finishing his course in Edinburgh, he went to Glasgow in 1771, partly by the advice of Ferguson, that he might be under Dr Thomas Reid, and partly with the view of being sent to Oxford on the Snell Foundation, which has been of use to many students of Glasgow, but has in some respects been rather injurious to the college, as it has led many to ascribe to it the mere reflected glory of being a training-school to higher institutions, whereas Glasgow should assert of itself that it is prepared to give as high an education as can be had in any University in the world. The youth seems at this time to have had thoughts of entering the Church of England; and if he had gone south, we can conceive him rising to as high a dignity as a Scotchman sent to Oxford on that foundation, has reached in our day, and, in that event, he would no doubt have discharged the duties of the Episcopal office with great propriety and dignity. But a destiny better suited to his peculiar character and gifts, was awaiting him. In the autumn of 1772, that is, when he was at the age of nineteen, he became substitute for his father in the chair of mathematics in Edinburgh. It is precisely such an office as this, a tutorship or assistant professorship, that the Scottish Colleges should provide for their more promising students; an office not to be reserved for sons or personal friends of professors, but to be thrown open to public competition. This is the one thing needful to the Scottish Universities, to enable them to complete the education which they have so well commenced, and to raise a body of learned youths, ready to compete with the tutors and fellows of Oxford and Cambridge. In 1775 Mr Stewart was elected assistant and successor to his father; in 1778, on Professor Adam Ferguson going to America as Secretary to a commission, he, upon a week's notice, lectured for him on Morals; and in 1785, Ferguson having resigned, Stewart was appointed to the office for which he was so specially fitted,—to the chair of Moral Philosophy in the University of Edinburgh.

We pause in the narrative, in order to look at the circumstances which combined to influence the youth, to determine his career, and to fit him for the good work which he performed. First, we have a mind not, certainly, of bright original genius, or of great intellectual force, but with a blending of harmonious qualities, a capacity for inward reflection, and a disposition toward it, a fine taste, and consummate judgment. From his youth he breathed the air of a college. He was early introduced to Roman literature, and made it his model. Stevenson used

Wynne's Abridgment of Locke's Essay as a text-book, and from it the student may have caught the fresh and observational spirit which Locke had awakened, while, at the same time, he was kept from what Cousin describes as the common defect of the British philosophy—being “insular”—by the other text-books employed, namely, the “*Elementa Philosophiæ*” of Heineccius, and the “*Determinationes Ontologicae*” of De Vries, works which discussed, in a more abstract and scholastic method, the questions agitated on the Continent posterior to the publication of the philosophy of Descartes. A still greater influence was exercised over the youth by Ferguson, who, with no great metaphysical ability, but in an altogether Roman, and in a somewhat Pagan manner, discussed, with great majesty and sweep, the topics—of which the pupil was ever after so fond—lying between mental science on the one hand, and jurisprudence on the other. From his own father, and through his own academical teaching, he acquired a taste for the geometrical method, so well fitted to give clearness and coherency to thought, and to teach caution in deduction. He thus became one of those metaphysicians (and they are not few) who have been mathematicians likewise, in this respect resembling (not to go back to Thales, Pythagoras, and Plato, in ancient times) Descartes, Leibnitz, S. Clarke, Reid, and Kant. In the class of Natural Philosophy he was introduced to the Newtonian physics, which had been taught at an early date in Scotland, and caught an enthusiastic affection for the inductive method and for Bacon, which continued with him through life, and is his characteristic among metaphysicians. But the teacher influencing him most, and indeed determining his whole philosophic career, was Thomas Reid, who, in a homely manner, but with unsurpassed shrewdness, and great independence and originality, was unfolding the principles of common sense, and thus laying a foundation for philosophy, while he undermined the scepticism of Hume. Stewart has found in Reid the model instructor, and it may be added, that Reid has found in Stewart, the model disciple. This whole course was an excellent training for a metaphysician; it would have been perfect if, along with his knowledge of natural philosophy, his somewhat dull apprehension had been whetted by an acquaintance—such as that of Locke in an earlier, and that of Brown in a later, age—with the more fugitive and complicated phenomena of the physiology of the body; and if, in addition, his over-cautious temper had been raised heavenward by an intimacy with the lofty spirit of Plato, or, better still, by an appreciation of the deep theological discussions which had collected around them so much of the English and Scottish speculative intellect of the two preceding centuries.

Like every other man not altogether self-contained, Stewart must have felt the spirit of his age, which, as coming in from every quarter, like air and sunshine, commonly exercises a greater influence on young men than individual teachers can possibly do through the special channels open to them. Hume had stirred the thoughts of thinkers to their greatest depths; and this was now the age in which Hume had to be met. Stewart was born fourteen years after the publication of the great sceptical work of modern times, the "Treatise on Human Nature;" and two years after the publication of the work from which all the debased modern utilitarianism has sprung, the "Inquiry Concerning the Principles of Morals." At the time when the youth was forming his convictions, Hume was living in Edinburgh, and the centre of an influence radiating round the man, who was a mixture of the lively, good-natured animal, and of the intellectual giant, but with a terrible want of the high moral and spiritual. The original disposition of Stewart did not tempt him to daring speculation; his domestic training must have prepossessed him against infidelity; and he had been placed, in Glasgow, under the only opponent worthy of Hume, who had appeared; and so these earthquake shocks just made him look round for a means of settling fast the foundations of the temple of knowledge.

Locke's philosophy had been the reigning one for the last age or two. Mr Veitch speaks of the "tradition of sensationalism, which the Scottish universities during the first half of the century, and up to the time of Reid, had in general dispensed in Scotland." This statement is too sweeping: for, first, Locke had given as high a place to reflection as to sensation; and, secondly, he had given a high office to intuition; while, thirdly, Locke's philosophy had not been received in Scotland without modification, or in its worst aspects, as it had been in France. Stewart, like Reid, entertained a high admiration of Locke, and was unwilling to separate from him, but he saw at the same time the defects of Locke, and that there were fundamental laws in the mind which Locke had overlooked, or only incidentally noticed. In Glasgow he must have felt the influence left behind by a train of eminent men. There Hutcheson had been the founder of a school, afterwards called the Scottish school. We know that this honour has been claimed for his predecessor in the ethic chair, Gershom Carmichael, the editor of Puffendorf, and the author of a little *Treatise on Natural Theology*: we have looked into his works, and are persuaded that he exercised an influence on the mind of Hutcheson, who was his pupil, but it must have consisted mainly in connecting him with the old and more abstract philosophy of the schoolmen, and of the Con-

tinent, and in keeping him from falling altogether into the experiential method of Locke. In addition to the external and internal sense of Locke, Hutcheson had called in a moral sense—a very inadequate account we grant—but still containing a truth, inasmuch as it represented moral good as discerned by an original and distinct moral power. In Glasgow, too, Adam Smith had expounded those original views which he afterwards published in his “Theory of Moral Sentiments,” and his “Wealth of Nations.” In Edinburgh, James Balfour of Pilrig, who was Professor of Moral Philosophy in the University from 1754 to 1764, had opposed Hume’s ethical views, on grounds, however, which do not give morality a sufficiently deep foundation in the constitution of man or character of God. He begins his “Delineations of the Nature and Obligations of Morality,” with the principle, that private happiness must be the chief end and object of every man’s pursuit, shows how the good of others affords the highest happiness, and, in order to sanction natural conscience, he calls in the authority of God, who must approve of what promotes the greatest happiness. But, in his “Philosophical Essays,” he opposes the theory which derives our ideas from sensation and reflection. “It may indeed be allowed that the first notions of things are given to the mind by some sensation or other; but then it may also be true, that after such notices are given, the mind, by the exercise of some inherent power, may be able to discover some remarkable qualities of such things, and even things of a very different nature, which are not to be discovered merely by any sense whatever.” Still, with all these references to intuition, and moral sense, and inherent power, there was a deep mine, very much concealed till it was opened fully to the view by the penetration and perseverance of Reid.

In order to estimate the character of the age, it must also be taken into account, that there was a strong expectation, that results were to follow from the application of inductive science, to mental phenomena, similar to those which had flowed from its application to physics. Bacon had declared that his method was as applicable to mental, as to material facts, though he seems to have had no idea of consciousness being the agent to be employed in the inquiry into the laws of mind. Sir Isaac Newton had said, in his *Optics*, “and if natural philosophy, in all its parts, by pursuing this method, shall at length be perfected, the bounds of moral philosophy will also be enlarged.” Pope, too, had said in his *Essay on Man*, “account for moral as for natural things.” Turnbull, under whom Reid studied in Aberdeen, had quoted this language of Newton and Pope, in his work on the “Principles of Moral Philosophy,” published in 1740; and his

aim was to "apply himself to the study of the human mind, in the same way as to that of the human body, or to any other part of natural philosophy." Catching this spirit from Turnbull, Reid was even now employing it to discover principles deeper than any that had been systematically noticed by Locke, by Hutcheson, or any Scottish philosopher. To this same noble work Stewart now devoted himself; but, seeking meanwhile to combine with the profound philosophy of Reid, a literary excellence like that of Hume and Smith.

And this leads us to notice, that we cannot form anything like an adequate idea of the influences which combined to mould the character of Stewart, who cultivated literature as eagerly as he did philosophy, without taking into account, that he lived in an age of great literary revival in Scotland. The union between Scotland and England being now compacted, it was seen that the old Scottish dialect must gradually disappear, and ambitious youths were anxious to get rid of their northern idioms, and even grave seniors, including noblemen and dignified doctors, like Robertson (as we learn from Lord Campbell's *Life of Loughborough*), had formed a society, in order to be delivered from their Scottish pronunciation. A company of authors had sprung up, determined to assert their place among the classical writers of England; and this had been already allowed to Hume, to Robertson, and Smith, and was being allowed to Beattie. Stewart had, no doubt, an ambition to take his place among the classical writers of Scotland.

While pursuing his studies at Glasgow, he read a paper on "Dreaming," before a literary society in connection with the University; and he subsequently read the same paper to a similar society in Edinburgh. The theory here started, was afterwards embodied in his "Elements," and contains, certainly, not the whole truth on this mysterious subject; but still a truth, namely, that in dreaming, the will is in abeyance, and the mind follows a spontaneous train. In the Edinburgh society he also read papers on "Taste," on "Cause and Effect," and "Scepticism." The fact that such topics were discussed, is a sign of the spirit which prevailed among the youth of Scotland at that time. It is worthy of being noticed, that at Glasgow, he boarded in the same house with Mr Alison, who afterwards, in his *Essay on Taste*, carried out the theory which had been started by Beattie, in his *Dissertation on Imagination*, as to the feeling of Beauty being produced by the association of ideas.

Quitting his course of training, we may now view him as delivering his professorial lectures, in the class-room in Edinburgh. By far the liveliest account of him is by Lord Cockburn. It is worthy of being read again by those who may have seen it before.

"He was about the middle size, weakly limbed, and with an appearance of feebleness which gave an air of delicacy to his gait and structure. His forehead was large and bald; his eyebrows bushy; his eyes grey and intelligent, and capable of conveying any emotion from indignation to pity, from serene sense to hearty humour, in which they were powerfully aided by his lips, which, though rather large perhaps, were flexible and expressive. The voice was singularly pleasing; and, as he managed it, a slight burr only made its tones softer. His ear both for music and for speech was exquisite; and he was the finest reader I have ever heard. His gesture was simple and elegant, though not free from a tinge of professional formality, and his whole manner that of an academical gentleman. . . . He lectured standing, from notes which, with their successive additions, must, I suppose, at last have been nearly as full as his spoken words. His lecturing manner was professorial, but gentlemanlike, calm and expository, but rising into greatness, or softening into tenderness, whenever his subject required it. A slight asthmatic tendency made him often clear his throat; and such was my admiration of the whole exhibition, that Macvey Napier told him not long ago that I had said there was eloquence in his very spitting. 'Then,' said he, 'I am glad there was at least one thing in which I had no competitor.' . . . To me, his lectures were like the opening of the heavens. I felt that I had a soul. His noble views, unfolded in glorious sentences, elevated me into a higher world."

There were hearers who felt that there was a want in his expositions, and there are readers still who feel in the same way. Ardent youths, like Brown and Chalmers, looked on him as timid and over-cautious. Chalmers wrote in 1801:—

"I attend his lectures regularly. I must confess I have been rather disappointed. I never heard a single discussion of Stewart's which made up one masterly and comprehensive whole. His lectures seem to me to be made up of detached hints and incomplete outlines, and he almost uniformly avoids every subject which involves any difficult discussion."

Chalmers lived to proclaim him the highest of academic moralists. Still there was ground, in appearance and in reality, for the early criticism. In his writings he adopts the plan which Dr Robertson took credit for introducing, that of throwing a great deal of his matter into notes and illustrations. This method, carried to the extent to which it has been done by Robertson, Stewart, and M'Crie, is a radically defective one, as it interrupts the flow of the discourse, and, with this, the interest in and comprehension of the whole. He has a most sensitive aversion to all such bold speculations as Leibnitz indulged in, and is jealous of all such deductions as Descartes and Kant have drawn out. He has no ability for sharp analysis, and he looks on a high abstraction with as great terror as some men do on

ghosts. He studiously avoids close discussion, and flinches from controversy; he seems afraid of fighting with an opponent, lest it should exhibit him in no seemly attitudes. Seldom does he venture on a bold assertion, and when he does, he always takes shelter immediately after behind an authority. Determined to sustain his dignity and keep up his flow of language, he often takes rounded sentences and paragraphs to bring out what a more direct mind would have expressed in a single clenching clause, or even by an expressive epithet. Often does the eager, ingenuous youth, in reading his pages, wish that he would but lay aside ceremony for a very little, and speak out frankly and heartily.

Still we should form a very unjust opinion of Stewart, if, in consequence of these weaknesses, we thought him devoid of originality, independence, or profundity. We certainly do not claim for him the sagacity of Locke, or the speculative genius of Leibnitz, or a power of generalising details equal to Adam Smith, or the shrewdness of Reid; or the logical grasp of Kant and Hamilton, and we admit that he was inferior to all these men in originality; but he has admirable qualities of his own,—in soundness of judgment he is more to be trusted than any of them; and if he is without some of their excellencies, he is also without some of their faults. He has no such rash and unmeasured diatribes as Locke's assault on innate ideas; no such extravagances as the monadical theory of Leibnitz; no such wasting of ingenuity as Smith's theory in his "Moral Sentiments;" he does not commit such gross misapprehensions in scholarship as Reid does; and he never allows any logic to conduct him to such preposterous conclusions as Kant and Hamilton landed themselves in, when they declared causation to be a law of thought and not of things. We have noticed that in many cases Stewart hides his originality, as carefully as others boast of theirs. Often have we found, after going the round of philosophers in seeking light on some abstruse subject, that on turning to Stewart, his doctrine is after all the most profound, as it is the most judicious.

We do not mean to enter into the details of his remaining life. In 1783 he married a Miss Bannatyne of Glasgow, who died in 1787, leaving an only child, afterwards Colonel Stewart. He spent the summers of 1788 and 1789 on the Continent. In the appendix to the Memoir, there is a selection from the letters which he wrote to his friends at home. Though written in the midst of instructive scenes, and on the eve of great events, they are excessively general and commonplace, and display no shrewdness of observation. In 1790 he married a daughter of Lord Cranston, a lady of high accomplishments, fascinating manners,

and literary tastes. His house now became the resort of the best society of Edinburgh, and he himself the centre and bond of an accomplished circle, at a time when the metropolis of Scotland in the winter months was the residence of many of the principal Scottish families, and of persons of high literary and scientific eminence. The weekly re-unions in his house, which happily blended the aristocracies of rank and letters, bringing together the peer and the unfriended scholar, were for many years the source of an influence that most beneficially affected the society of the capital. His influence was extended by his receiving into his house, as boarders, young men chiefly of rank and fortune. In his classes of Moral Philosophy and of Political Economy, he had under him a greater body of young men who afterwards distinguished themselves, than any other teacher that we can think of. Among them we have to place Lord Brougham, Lord Palmerston, Lord John Russell, Francis Horner, Lord Lansdowne, Lord Jeffrey, Sir Walter Scott, Sydney Smith, Dr Brown, Dr Chalmers, James Mill, Sir A. Alison, and many others who have risen to great eminence in politics, in literature, or philosophy; and most of these have acknowledged the good which they derived from his lectures, while some of them have carried out in practical measures the principles which he inculcated. He seems, in particular, to have kindled a fine enthusiasm in the breast of Francis Horner, who ever speaks of him in terms of loftiest admiration, and, though cut off in early life, lived long enough to exhibit the high moral aims which he had imbibed from the lessons of Stewart.

It was in 1792 that the first volume of his *Elements* was published. In 1793 appeared his *Outlines of Moral Philosophy*, containing an epitome of the doctrines expanded in his larger writings. His other works appeared after successive intervals: his *Account of Adam Smith* in 1793, of *Robertson* in 1796, and of *Reid* in 1802; his *Philosophical Essays* in 1810; the second volume of his *Elements* in 1814; the first part of his *Dissertation* in 1815, and the second in 1821; the third volume of his *Elements* in 1827; and the *Active and Moral Powers* in 1828. The *Lectures on Political Economy* are now published for the first time.

In 1805 he threw himself, with more eagerness than he was wont to display in public matters, into the controversy which arose about the appointment of Leslie—a man of high scientific eminence, but with a great deal of the gross animal in his nature—to the chair of Mathematics. He wrote a pamphlet on the subject, and appeared in the General Assembly of the Church of Scotland, as a Presbyterian elder, to aid the evangelical party, who, under the leadership of Sir H. Moncrieff, were no way

inclined to join the moderate party in their attempt to keep out a distinguished man, because he entertained certain views on the subject of physical causation, and to retain the College chairs for themselves. In his speech on the occasion, Stewart does let out feeling for once, and it is mingled pride and scorn :—

“ After having discharged for more than thirty years (not, I trust, without discredit to myself) the important duties of my academical station, I flatter myself that the House does not think it incumbent on me to descend to philosophical controversies with such antagonists. Such of the members, at least, as I have the honour to be known to, will not, I am confident, easily allow themselves to be persuaded that I would have committed myself rashly and wantonly on a question in which the highest interests of mankind are involved.”

In delivering the speech from which the above is an extract, he was called to order, and, not being accustomed to such handling, he sat down abruptly. The motion of Sir H. Moncrieff was carried by a majority, which occasioned great joy to the Edinburgh Liberals.

In 1806, the Whig party, being in power, procured for him a sinecure office, entitled the Writership of the Edinburgh Gazette, with a salary of L.300 a-year. In 1809, Mr Stewart was in a precarious state of health, much aggravated by the death of a son by his second wife, and he asked Dr Thomas Brown to lecture for him. In 1810, Brown, being strongly recommended to the Town Council by Stewart, was appointed conjoint professor, and henceforth discharged all the duties of the office. Brown never attacked Stewart, but he openly assailed Reid; and we suppose the intimacy between Stewart and Brown henceforth could not have been great. Stewart delivered his ultimate estimate of Brown in a note appended to the third volume of the *Elements*. There is evidently keen feeling underlying it, but the criticism is, on the whole, a fair and just one. Stewart now lived, till the close of his life, at Kinniel House, Linlithgowshire—a residence placed at his service by the Duke of Hamilton. Henceforth he was chiefly employed in maturing and arranging the philosophical works which he published. The details given of this part of his life are scanty and uninteresting. In 1820 he came forth to support Sir James Mackintosh as successor to Brown; and when Sir James declined the office, Stewart recommended Sir W. Hamilton, who seems ever afterwards to have cherished a feeling of gratitude towards Stewart. The election fell on Professor Wilson, who, while the fittest man living for the chair of Rhetoric and Belles Letters, had no special qualifications for a chair of Philosophy.

In 1822, Mr Stewart had a stroke of paralysis, from which,

however, he partially recovered. Mrs Stewart describes him, in 1824, as troubled with a difficulty of speech, and a tremor in his hand, as walking two or three hours every day, as cheerful in his spirits, his mind as acute as ever, and as amusing himself with reading on his favourite pursuits, and with the classics. He had just given to the world his work on the Active Powers, and was on a visit to a friend in Edinburgh, when he died on 11th June 1828. He was buried in the family vault in the Canongate. There is a monument in honour of him on the Calton Hill; but the fittest memorial of him is to be found, first, in his pupils, who have done a good work in their day, and now in his writings, which may do a good work for ages to come.

If there has been an anxiety felt to have a memoir of Stewart, there has been an equally strong desire to have a complete edition of his works. We do not know what causes may have hindered this in time past—we suspect that they must have arisen from different parties having an interest in his published writings; but this we know, that it was difficult to procure certain of his works, as, for example, the third volume of his *Elements*, of which there had never been more than the one quarto edition. Every one rejoiced, in these circumstances, to find it intimated, that we were to have the collected works of Stewart, edited by Sir W. Hamilton, the most competent man then living for the undertaking. This edition* is now all but completed, and will ever be the standard one. The editor has not enriched it with such notes as he has appended to his edition of Reid—notes distinguished for the very qualities which Reid was deficient in, extensive scholarship and rigid analysis. Sir W. Hamilton, in undertaking the work, stipulated that Mr Stewart's writings should be published without note or comment. We rather think that Hamilton had not such a sympathy with the elegant and cautious disciple as with the shrewd and original master. Besides, elaborate notes to Stewart must have been very much a repetition of his notes to Reid. In this edition Hamilton is tempted at times to depart from his rule; he does give us a note or comment when the subject is a favourite one, such as the freedom of the will; and often must he have laid a restraint on himself, in not pruning or amending to a greater extent. But the value of this edition consists in its being complete, in its having references supplied, and one index after another, and in its containing additions from Stewart's manuscripts, and these often of great value, both in themselves and as illustrating Stewart's philosophy. Sir W. Hamilton was cut off before the edition was completed, but Mr Veitch has carried on the work in the same manner and spirit. Having said so

much of this fine edition, we must protest against the occasional translation of the language and views of Stewart into those of Hamilton, in places where it is purported to give us Stewart himself. Thus, in Index, vol. iv., p. 408, Stewart is represented as, in a place referred to, discussing the question as to whether some of our notions be not "native or *a priori*," but, on looking up the page, no such language is used; and the same remark holds good of vol. v., p. 474, where Stewart is spoken of as describing our notions both of matter and mind as merely "phænomenal," a view thoroughly Kantian and Hamiltonian, and not sanctioned by Stewart. We must be allowed, also, to disapprove of the liberty taken with the Outlines of Moral Philosophy, which is cut up into three parts, and appears in three distinct volumes. This is the most condensed and direct of all Stewart's writings; it contains an abridgment of his whole doctrines: it is one of the best text-books ever written, and it should have appeared in its unity, as Stewart left it.

We do not propose to criticise these ten massive volumes. This would be a heavy work to ourselves and to our readers: it would almost be equivalent to a criticism of all modern philosophy. Nevertheless, we must touch on some topics of an interesting and important kind, as discussed by Stewart, and again discussed by later writers on mental science.

The first volume of the collected works contains the Dissertation. We look upon it as the finest of the Dissertations in the Encyclopædia Britannica; and this is no mean praise, when we consider the number of eminent men who have written for that work. We regard it, indeed, as upon the whole the best dissertation which ever appeared in a philosophic serial. As a history of modern philosophy, especially of British philosophy, it has not been superseded, and, we believe, never will be set aside. It is pre-eminent for its fine literary taste, its high moral tone, its general accuracy, its comprehensiveness of survey, and its ripeness of wisdom. When we read it, we feel as if we were breathing a pure and healthy atmosphere, and that the whole spirit of the work is cheering, as being so full of hope in the progress of knowledge. Its critical strictures are ever candid, generally mild, very often just, and always worthy of being noted and pondered. The work is particularly pleasing in the account given of those who have contributed by their literary works to diffuse a taste for metaphysical studies, such as Montaigne, Bayle, Fontenelle, and Addison. It should be admitted that the author has scarcely done justice to Grotius, and failed to fathom the depth of such minds as Leibnitz and Jonathan Edwards. We agree, moreover, with those who regret that he should ever have been tempted to enter on a criticism of Kant,

whose works he knew only from translations and imperfect compends.¹

The next three volumes contain the Elements of the Philosophy of the Human Mind, and are introduced by a portion of the Outlines. In the first volume of the Elements and in the opening of the second, he spreads out before us a classification of the intellectual powers,—as Perception, Attention, Conception, Abstraction, Association of Ideas, Memory, Imagination, and Reason. The list is at once defective and redundant. Stewart acknowledges Self-consciousness, which is an inseparable concomitant of all the present operations of the mind, to be a separate attribute; and in this he seems to be right, inasmuch as it looks at a special object, namely, self in the existing state, and gives us a distinct class of ideas, namely, the qualities of self, such as thinking and feeling. Yet it is curious, that while he gives it half a page in his Outlines, it has no separate place in the Elements. It is also a singular circumstance that Reid dismisses it in the same summary way. An inductive observation, with an analysis of the precise knowledge given us by self-consciousness, would give a solid foundation for the doctrine of human personality, and clear away the greater part of the confusion and error lingering in the metaphysics of our day. Nor is there any proper account given in the Elements of that important group of faculties which discover relations among the objects known by Sense-Perception, and Consciousness. The omission of this class of attributes has led him into a meagre nominalism, very unlike the general spirit of his philosophy. He restricts the word Conception to the mere imaging power of the mind, and even to the picturing of bodily objects, as if we could not represent mental objects as well, as, for example, ourselves or others in joy or sorrow. In a later age, Hamilton has confined the term in an opposite direction to the logical or general notion. Stewart's classification is also redundant. Attention is

¹ In regard to histories of philosophy, we have now three Parts of Mr Maurice's work, in all of which we have huge sunlit objects, seen, as it were, in a fog, raised by the heat of a dreamy, feverish, sultry day in summer. The great defect of all his works is, that he seldom utters a clear categorical proposition. Mr Lewes has published a library edition of his Biographical History of Philosophy. The work is clever and acute, but is not profound, and is thoroughly sophistic. He has no sympathies with humble, cautious, and practical truth seekers, such as Socrates and Thomas Reid. His appreciation is of the Arabs of philosophy, such as the Sophists and David Hume, and of thought-bewildered men, such as Spinoza, of whose Ethics he threatens to give us a translation; and his end is to show us that philosophy can yield no truth, and thus to shut us up to a miserable Comtism, in which is omitted the religion (if religion it can be called), which the late M. Comte declared to be the most essential part of his system. In his *Politique Positive*, M. Comte speaks of those in this country who have adopted the other parts of his system, and rejected his religious worship, as guilty either of an impotency of intellect, or an insufficiency of heart, or, most commonly, of both.

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not a separate faculty, but is an exercise of will—roused, it may be, by feeling, and fixing the mind on a present object. He does not seem to know what to make of Reason, as a distinct faculty; and, as defined by him, it ought to include abstraction, which is certainly a rational exercise. But, if the work is defective in logical grasp, it excels in its descriptions of concrete operations, and in its explanations and elucidations of phenomena presenting themselves in real life. All his works are replete with those “intermediate axioms” which Bacon commends as most useful of all, as being removed equally from the lowest axioms, which differ but little from particulars, and from the highest and most general, which are notional, abstract, and of no weight; whereas the “intermediate are true, solid, full of life, and upon them depend the business and fortune of mankind.” The fine reflection and lofty eloquence of Stewart come out most pleasingly and instructively in all those passages in which he treats of association and imagination.

On one important point, discussed frequently in the *Elements*, the school of Reid and Stewart was led into error by their excessive caution, and by being awed so much by the authority of Locke. Reid maintained, in a loose way, that we do not know substance but qualities, and Stewart wrought this view into a system. We are not, he says, properly speaking, conscious of self or the existence of self, we are merely conscious of a sensation or some other quality, which by a subsequent suggestion of the understanding, leads to a belief in that which exercises the quality.—(*Phil. Essays*, p. 58, etc.) This we must regard as a radically defective doctrine. We do not know intuitively a quality of self apart from self; we know both in one primitive, concrete act, and it is only by a subsequent operation that we separate in thought the quality which may change in its action from the self or substance which abideth. Descartes erred, we think, when he represented the mental process as being “*cogito ergo sum*,” the primitive cognition is of the *ego cogitans*. But we look on Stewart as equally erring when he says, that there is first a sensation and then a belief in self. In a later age, Sir W. Hamilton connected the *qualitative* theory of Stewart with the *phenomenal* theory of Kant. In doing so he was guilty, we must take the liberty of saying, of a great and inexcusable blunder. Stewart would have repudiated the phenomenal theory of Kant as at all identical with his own. Stewart, no doubt, speaks of the phenomena of the mind, but he means by phenomena not, as Kant did, *appearances*, but individual *facts* to be referred to a law; and qualities with him were *realities*. But, legitimately or illegitimately, Hamilton identifying the qualitative theory with the phenomenal, deduces from them a system of relativity, which

ended in nihilism, or at least in nescience. We are glad to notice that Mr Mansel, notwithstanding his great and just admiration of Hamilton, has emancipated himself from this fundamental error. He proclaims, "I am immediately conscious of myself, seeing and hearing, willing and thinking."—(*Proleg. Logica*, p. 129; also, *Art. Metaph.* in *Encyc. Brit.*) We have sometimes thought, that if Stewart had foreseen all the logical consequences to be deduced from his views, he would have fallen back on the same common sense doctrine. We regret that Mr Mansel has not gone a step farther, and placed our cognition of matter on the same footing in this respect as our knowledge of mind. We are sure, at least, that this would be altogether in the spirit of Reid and Stewart. We maintain that, just as by self-consciousness we know self as exercising such and such a quality, say thinking or feeling, so, by sense-perception, we know a body as extended and exercising power or energy. This is the simplest doctrine; it seems to be the only one consistent with consciousness, and is the proper doctrine of natural realism as distinguished from an artificial system of relativity.

In the second volume of the *Elements*, after a feeble and chiefly verbal disquisition on Reason, he proceeds to treat of the "Fundamental Laws of Belief." We reckon the phrase a very happy one, and a great improvement on "Common Sense," which labours under the disadvantage of being ambiguous, inasmuch as it usually denotes that unbought, untaught sagacity, which is found only in certain men, and which others can never acquire, whereas it can be admitted into philosophical discussion only when it denotes principles which are regulating the mind of all. We have a remark to make as to the place in which he discusses these fundamental laws. It is after he has gone over the greater number of the faculties, and he seems to treat them as involved in Reason. And we acknowledge that there may be some advantages in first going over the faculties and then speaking of these fundamental laws. But we must guard against the idea that these principles have not been involved in the faculties which he has previously gone over, such as Perception, Abstraction, and Memory. The "Fundamental Laws" are not to be regarded as different from the Faculties; they are, in fact, the Necessary Laws of the Faculties, and guiding their exercise. These laws work in all minds, infant and mature, sane and insane. M. Morel was asked to examine a prisoner who seemed to be deranged, and he asked him how old he was; to which the prisoner replied, "245 francs, 35 centimes, 124 carriages," etc. To the same question, more distinctly asked, he replied, "5 metres 75 centimetres." When asked how long he had been deranged, he answered, "Cats, always-cats." M. Morel at once declared

his madness to be simulated, and states, "In their extreme aberrations, in their most furious delirium, madmen do not confound what it is impossible for the most extravagant logic to confound. There is no madman who loses the idea of cause, of substance, of existence."—(See *Psychol. Journal*, Oct. 1857.)

Stewart's doctrine of Causation seems to us to be deficient and inadequate. He is altogether right in calling it a Fundamental Law of Belief, which necessitates the mind to rise from an effect to a cause. But he does not seem to observe all that is involved in the cause. He gives in too far to Hume on this subject, and prepared the way for Brown's theory. He does not see, in particular, that causation springs from power being in the substance or substances which act as the cause, and that we intuitively discover power to be in substances both mental and material. His distinction between efficient and physical cause is of a superficial and confused character. It may be all true that, in looking at physical action, we may not know intuitively where the full efficiency resides, whether in the physical object alone or in mind (the Divine) acting in it; but we are certain that there is an efficiency somewhere in some substance. We are by no means sure that he is right in limiting power in the sense of efficiency to mental action. We agree here with the criticisms of Cousin (as indeed we agree with most of the criticisms of Cousin on the Scottish School) where he says, that while our first idea of cause may be derived from our own voluntary action, we are at the same time intuitively led to ascribe potency to other objects also, and that Reid and Stewart, in denying that we discover efficiency in body, are acting contrary to their own principles of common sense, and in contradiction to the universal opinion of the human race, which is, that fire burns and light shines.—(See Cousin, *Phil. Ecoss.*, p. 437, ed. 1857.) Stewart has also failed, as it appears to us, to give the proper account of the intuition which regulates and underlies our investigations of nature. This is not, as he represents it, a belief in the uniformity of nature; a belief which appears to us to be the result of experience; which experience, as it discovers the rule, may also announce the exceptions. The child does not believe, nor does the savage believe, nature to be uniform. The underlying beliefs, which carry us on in our investigations of nature are those of identity of being, of substance and quality, of cause and effect. Hence it is quite possible to prove a miracle which may not be in conformity with the uniformity of nature, but is quite compatible, as Brown has shown, with our intuitive belief in causation, for when creature power fails we can believe in creative.

It is in the second volume of the *Elements* that we find the logical disquisitions of Stewart. He has utterly failed in his

strictures on Aristotle's Logic. The School of Locke, and the School of Condillac, and the School of Reid, have all failed in constructing a logic of inference which can stand a sifting examination. The Aristotelian analysis of reasoning stands at this moment untouched in its radical positions. The objections of Campbell and Stewart have been answered by Whately; and those advanced by Mr J. S. Mill, have been answered by Mr Kidd, who has also thoroughly undermined Mr Mill's own attributive theory of reasoning.¹ In giving our adherence to the Aristotelian analysis, we admit that improvements are being wrought in it by that school of logicians which has sprung from Kant, and of which Hamilton is the leader in this country, followed by such eminent men as Mansel, Thomson, and Spalding. But their improvements ought not to be admitted till the formal logicians thoroughly deliver their expositions of the laws of thought from all that false Kantian metaphysics, which represents thought as giving to the objects a "form" which is not in the objects themselves. Besides, we cannot allow Logic to be an *a priori* science except under an explanation; we admit that the laws of thought operate in the mind prior to all experience, but we maintain that they can be discovered by us only *a posteriori*, and by a generalisation of their individual actings.

But while we may thus expect a perfected Universal Logic, treating of the laws of thought as laws of thought—not independent of objects but whatever be the objects—we hope there will grow up alongside a Particular Logic, which will be a more practically useful Logic, to consider the laws of thought as directed to particular classes of objects, and to treat of such topics as Demonstrative and Probable Evidence, Induction, and Analogy. In regard to this latter Logic, Stewart must ever be referred to as an authority. So far, indeed, as the theory of definitions and axioms is concerned, we prefer very much the view of Whewell, as developed in his Philosophy of the Inductive Sciences. But, in regard to Induction, we believe that Stewart's account of it is, upon the whole, the best which appeared from the time of Bacon down to this our own age. We have now, however, two great works, which have left every other far behind, that of Whewell and that of Mr J. S. Mill. Not that we regard either of these as perfect. Dr Whewell has exaggerated the place of the mental element, and has expressed it in most unfortunate phraseology, such as Fundamental Ideas and Conceptions, terms which have been used in twenty different

¹ Dr Whately, as far as can be judged from the editions of his Work, seems entirely ignorant of all that has been done in Logic the last quarter of a century, but he has met with an acute defender in Mr Kidd.—See his *Primary Principles of Reasoning*.

significations, and are used by him to denote that the mind superinduces on the facts something not in the facts, whereas the mental power merely enables it to discover what is in the facts. Mr Mill, on the other hand, has overlooked the mental element altogether, and denies all necessary and universal truth. We may hope, in future years, to have a perfect Inductive Logic, by a judicious combination of these two works, but this could be done only by a man of the same high intellectual stature as Whewell and Mill, and this will seldom be met with. It is to be regretted that, since the days of Stewart, there is not a single Scotchman who has presented a work on Induction, of any name or value.¹ In regard to Analogy, the recent discoveries as to the typical forms of animals and plants will enable logicians to give a far more comprehensive and yet more stringent view of reasoning from analogy than has been done by Stewart, by Whewell, or by Mill.

The third volume of the *Elements* treats of certain concrete and practical matters, which Stewart was peculiarly qualified to discuss, and which bring out some of the finer qualities of his mind. All his disquisitions had tended to become verbal, and here he treats expressly of language, which he does with fine discernment, but falls into a great blunder in regard to Sanscrit, which he represents as of comparatively late origin, and analogous to mediæval Latin, whereas it has a literature reaching back at least twelve hundred years before Christ. He has some interesting, though by no means profound, remarks on the sympathetic affections. But by far the finest parts of the volume are those in which he treats of the varieties of intellectual character, and of the peculiarities of the metaphysician, mathematician, the poet and the sexes. Thus, of the mere metaphysician, he says, that

“He cannot easily submit to the task of examining details, or of

¹ It is a good sign of the times, however, that we have excellent works on Bacon from England, France, and even Germany. The edition of the *Works of Bacon* by Ellis and Spedding, now in course of publication, will ever be the standard one, in consequence of the pains bestowed on it. The public seem to expect from Mr Spedding a *Life of Bacon* of an impartial character, and justifying him from some of the sweeping charges of Pope and Macaulay. It is an interesting circumstance that, perhaps, the fairest estimate which we have of Bacon and the Inductive System, is by a German, Kuno Fischer, in his “*Francis Bacon of Verulam*” (translated by Oxenford). He errs, however, after the usual German mode of theorising, in connecting Bacon with such men as Hobbes and Hume, the former of whom never professed to follow the Baconian method, and the latter of whom formed a very low estimate of Bacon, and has been most effectively met by Reid and Stewart, who professedly and really adopted the inductive system. This has been shown by Remusat, in his pleasantly written and judicious work, “*Bacon Sa Vie, Son Temps, Sa Philosophie*.” It does not appear that Remusat has a thorough appreciation of the Inductive Method, in itself or in its results, but he has estimated justly Bacon’s general philosophy, and has some good remarks on the metaphysical points involved in Induction.

ascertaining facts, and is apt to seize on a few *data* as first principles, following them out boldly to their remotest consequences, and afterwards employing his ingenuity to reconcile, by means of false refinements, his theoretical assumptions with the exceptions which seem to contradict them."

He shows that the metaphysician is safe from the checks met with in physics, "where speculative mistakes are contradicted by facts which strike our senses." Again, of mathematics, he says:—

"That while they increase the faculty of reasoning or deduction, they give no employment to the other powers of the understanding concerned in the investigation of truth."

He adds—

"I have never met a mere mathematician who was not credulous to excess."

In the same volume he discusses cautiously and judiciously the comparison between the faculties of man and brutes. We suspect, however, that the theory has not yet been devised, it has certainly not been published, which is fitted to give a satisfactory account of the relation of the brute to the human faculties. We suppose that Bonnet is right when he says that we shall never be able to understand the nature of brute instinct, till we are in the dog's head without being the dog. It is certain that we have at this moment nothing deserving of the name of science on this subject. We have sometimes thought that the modern doctrine of homologues and analogues, if extended and modified to suit the new object, might supply the key to enable us to express some of the facts. Certain of the brute qualities are merely analogous to those of man (as the wing of a butterfly is analogous to that of a bird); others are homologues, but inferior in degree; while there are qualities in man different in kind from any in the brute. Aristotle called brute instincts, *μικροκατα της ανθρωπίνης ζωης*. They would be more accurately described as anticipations or types of the coming archetype. The volume closes with an account of a boy born blind and dumb.

The Philosophical Essays are an episode in his system as a whole, even as his numerous notes and illustrations are episodes in the individual volumes. We are tempted, in looking at them, to take up two of the subjects discussed, as a deep interest still collects around them, and the questions agitated cannot yet be regarded as settled.

Every careful reader of Locke's Essay must have observed two elements running through all his philosophy—the one, a sensational, or rather to do justice to Locke, who ever refers to reflection

as a separate source of ideas, an experiential element, and the other a rational. In the opening of the *Essay* he denies innate ideas apparently in every sense, and affirms that the materials of all our ideas are derived from sensation and reflection; but, as he advances, his language is, that by these sources ideas are "suggested and furnished to the mind;"¹ he calls in faculties with high functions to work on the materials; speaks of ideas which are "creatures and inventions of the understanding;" appeals to "natural law" and the "principles of common reason;" and in the Fourth Book gives a very high, or rather deep place to intuition; says that we have an intuitive knowledge of our own existence; speaks of the "mind perceiving truth as the eye doth light, only by being directed toward it;" declares that in the "discovery of and assent to these truths, there is no use of the discursive faculty, no need of reasoning, but they are known by a superior and higher degree of evidence," and talks even of a "necessary connection of ideas." It unfortunately happened that in France, to which Locke was introduced by Voltaire and the Encyclopædists, they took the sensational element alone, and the effect on thought and on morality was most disastrous. Unfortunately, too, Locke has become known in Germany, chiefly through France, and hence we find him all over the Continent, described both by friends and foes as a sensationalist; and the charge has been re-echoed in this country by Sir W. Hamilton and Mr Morell.² Yet it is quite certain that Locke has an intellectual as well as a sensational side. We have, in a careful perusal of the *Essay*, mainly for this very end, discovered in every book, and in the majority even of the chapters, both sides of the shield; but we confess that we have not been able to discover the line that joins them.³ We do not think that Stewart's remarks on this subject are exhaustive or decisive; he is evidently wrong in supposing that Locke identified reflection with the reason which discovers truth; but his strictures are always candid and sometimes just.

In the *Philosophical Essays* Stewart has many fine observations on Taste and Beauty. On this subject he was favourably disposed towards the theory of his friend Mr Alison, and he ascribes more than he should have done to the association of ideas. But he never gave his adhesion to this hypothesis as a full ex-

¹ This is the very language adopted by Reid and Stewart.

² The rational side of Locke has been brought out in a work of ability lately published, "*The Intellectualism of Locke*," by T. E. Webb, now, we believe, Professor of Moral Philosophy in Dublin University. Most appropriately does such a work come from a college, which, ever since the days of Molyneux, the correspondent of Locke, has held the *Essay* on the Human Understanding in the highest repute. We are not convinced that Mr Webb has succeeded in proving the consistency of Locke.

planation of the phenomena. "If there was nothing," he says, "originally and intrinsically pleasing or beautiful, the associating principle would have no materials on which it could operate." The theory of association was never favourably received by artists, and has been abandoned long ago by all metaphysicians. The tendency now is to return to the deeper views which had been expounded long ago by Plato, and we may add, by Augustine. We find that Stewart refers to the doctrine of Augustine, who "represents beauty as consisting in that relation of the parts of a whole to each other which constitutes its unity;" and all that he has to say of it is, "The theory certainly is not of great value, but the attempt is curious." The æsthetical writers of our age would be inclined to say of it that there is more truth in it than in all the speculations of Alison, Stewart, Jeffrey, and Brown.* It may be safely said that, while earnest inquirers have had pleasant glimpses of beauty, to no one has she revealed her full charms. When such writers as Cousin, Ruskin, and M^r Vicar dwell so much on Unity, Harmony, Proportion, we are tempted to ask them—does then the feeling of beauty not arise till we have discovered such qualities as Proportion, Unity, and Harmony? and if they answer in the affirmative, then we venture to show them that they are themselves holding a sort of association theory; for they affirm that, the beautiful object does not excite emotion till, as a sign, it calls forth certain ideas—we suspect of truth or goodness. We are not quite sure that we can go the length of this school, when they speak of beauty as a quality necessary, immutable, eternal, like truth and moral good, and connect it so essentially with the very nature of God. There are sounds and colours and proportions felt to be beautiful by us, but which may not be appreciated by other intelligences, and which are so relished by us, simply because of the peculiarities of our human organisation and constitution. We acknowledge that, when we follow these colours, and sounds, and proportions, sufficiently far, we come invariably to mathematical ratios and relations; but we are now, be it observed, in the region of immutable truth. Other kinds of beauty, arising from the contemplation of happiness and feeling, land us in the moral good, which is also necessary and eternal. We have sometimes thought that beauty is a gorgeous robe spread over certain portions of the true and the good, to recommend them to our regards and cluster our affections round them. Our æsthetic emotions being thus roused, the association of ideas comes in merely as a secondary agent, to prolong and intensify the feeling.¹

¹ We have had of late two excellent works on Beauty by Scotchmen. Professor Blackie's "Lectures on Beauty" are written quite in his own dashing and spirited manner, and comprise a vast amount of solid truth. A periodical which

The two volumes on the Philosophy of the Active and Moral Powers, were published by Stewart immediately before his death. The leading ideas unfolded in them had been given, in an epitomised form, in the *Outlines* published many years before. They are somewhat too bulky for all the matter they contain, and they want somewhat of the freshness of his earlier works; but they are characterised by profound wisdom, by a high moral tone, by a stately eloquence, and the felicitous application of general principles to the elucidation of practical points. He begins with the *Instinctive Principles of Action*, which he classifies as *Appetites, Desires, and Affections*. The arrangement is good, in some respects, but is by no means exhaustive. As the next step in advance in this department of mental science, an attempt must be made to give a classification of man's motive principles, or of the ends by which man may be swayed in desire and action. Among these will fall to be placed, first of all, pleasure and pain; that is, man has a natural disposition to take to pleasure and avoid pain. But this is far from being the sole motive principle in man's mind. There are many others. There is, for example, the tendency of every native faculty to act, and this irrespective of pleasure or pain. Again, there are particular natural appetencies, which look to ends of their own, towards (to use the language of Butler) particular external things of which the mind hath always a particular idea or perception towards these things themselves, such as knowledge, power, fame, and this independent of the pleasure to be derived from them. Higher than all, and claiming to be higher, is the moral motive, or obligation to do right. A classification of these motive principles, even though only approximately correct, would serve most important purposes in philosophy generally, and more especially in ethics and all the social sciences. Very low and

represents young Oxford and Cambridge, congratulates him on his hits at the national faith of Scotland; and yet we know not that he has anything better to substitute, and we are sure he would repudiate that mixture of high-churchism and low doctrinism which his critics are seeking to recommend. His translations from Plato appended are thorough reproductions of the original. Mr Blackie would confer a mighty boon on Scotland, and help to soften the hardness of the Scottish character, if he could create in Edinburgh University a taste for Plato as strong as the taste for Aristotle in Oxford. The other work is on "*The Beautiful in Nature, Art, and Life*. By A. J. Symington," an adherent, we believe, of one of Scotland's most uncompromising religious sects. It is the production of one who has travelled wide intellectually, and gathered his knowledge from afar. He does not profess to sound all the theoretical depths of the subject; but, on a rich ground-work of his own he has set gems selected from all sorts of authors sacred and profane, and has given us noble thoughts on architecture, sculpture, painting, poetry, music, and life. When Sir W. Scott represented the Covenanters as opposed to all sorts of manly sports, Dr M'Crie showed that their ministers often joined in such games, and at times stood first. If any one will maintain that Scotland's stern sects are opposed to the fine arts, we bid him read Symington's work on the Beautiful.

inadequate views have been taken of these motive principles of humanity, especially by those who represent man as capable of being swayed only by the prospect of securing pleasure or avoiding pain. Mr Veitch seems to expect great results to be derived from recognising the "place and importance, in ethical speculation, of the Aristotelic doctrine of the pleasurable—a grand and fertile, but little illustrated principle." We have an expectation that some curious questions will be started by the revival of the old Platonic and Aristotelic disquisitions on this subject, in the forthcoming volumes of Sir W. Hamilton. But it should never be forgotten, that the emotive part of man's nature may be excited by a great many other objects as well as pleasure and pain, by all the objects, indeed, which are addressed to the motive principles of man. It is the apprehension of objects as about to gratify the motive principles of the mind—whatever they be—which stirs up the emotions. Thus, the apprehension of a coming object, which is to gratify a motive principle, excites hope, which is strong in proportion to the strength of the apprehension, and the strength of the particular motive principle; while the apprehension of a coming object, which is to disappoint this motive principle, stirs up fear. It is strange that Stewart nowhere treats of the emotions in his Philosophy of the Active Powers.

Stewart's View of the Moral Power in Man, and of Moral Good, seems to us to be substantially correct. In treating of these subjects, he avows his obligations to Butler and Price.¹

¹ Aristotle holds his place at Oxford. We rejoice at this, provided he is not allowed to slay all his younger brethren that he may be undisturbed in his reign; that is, provided his writings are not studied, to the neglect of modern authors who have proceeded in the inductive manner. The volume on the "Ethics of Aristotle," lately published by Sir Alexander Grant of Oxford, is the best work in the English language on the ethical system of Aristotle, even as the first half of the second volume of Archer Butler's History is the best work on the Dialectics of Plato. We do not agree with Sir Alexander in his view of the death of Socrates, but we are grateful to him for his account of the Sophists, as against Grote. His account of the relation in which the philosophy of Aristotle stood to the previous Grecian systems, is searching, and generally accurate; though he does not, we think, give full credit to Aristotle for correcting the extravagances of Plato, who did not acknowledge the reality of the individual. Sir Alexander seems to us to have unconsciously fallen at times under the influence of a Hegelianism, which juggles with the phrases objective and subjective; which forgets that the mind *intuitively knows the individual*, and thence rises to the general; which blames Socrates for not discovering the contradictions on which Hegel dwells, and confounds the Greek search after the "Real" (αληθές) with the modern German search after the "Absolute." The most masterly parts of Sir Alexander's works, are those in which he shows Aristotle's precise doctrines, as distinguished from the doctrines of his predecessors and successors, and in which he explains the "Dunamis," the "Entelecheia," the "Energeia," the "Hexis," the "Ergon," the "Telos," the "Mesotes." After reading it, we feel as if we understood Aristotle better than ever we did before. We agree with him in what he says as to the difference between the Aristotelian systems and the modern inductive systems of Butler and Stewart; but we

His doctrine has been adopted, with some modifications, which are improvements, by Cousin. Stewart and Cousin are the most elevated of all the moralists who treat of ethics on grounds independent of the Word of God. We are convinced that they never could have given so pure a morality, had they not lived in the midst of light shed abroad on our earth by a supernatural religion. We have always felt it to be a strange circumstance, that Stewart and Cousin, in giving so high a view of the moral faculty, are never led to acknowledge that it condemns the possessor; and, after presenting moral good in so rigid a form, are not constrained to acknowledge that the moral law has not been kept by man. Taking their own high principles along with them, neither could have looked within, without discovering sin to be quite as much a reality as virtue. Stewart could not have gone out of his dwelling in the old College or the Canonicate, nor can Cousin go out of his chambers in the Sorbonne, without being obliged to observe how far man and woman have fallen beneath the ideal picture which they have drawn in their lectures. At the very time when the Scottish metaphysicians were discoursing so beautifully of moral virtue, there was a population springing up around their very colleges in Edinburgh and Glasgow, sunk in vice and degradation, which appalled the good men of the next age—the age of Chalmers—to contemplate, which the men of this age know not how to grapple with, and which is not to be arrested by any remedy which the mere philosophic moralists have propounded. We acknowledge most fully, that Stewart's lectures and writings have tended, directly or indirectly, to carry several important measures which are calculated to elevate the condition of mankind, such as Reform in the Legislature, Prison Improvement, and the Abolition of Tests and of Restrictions on Commerce. But the institutions which aim at lessening the sin and misery of the outcast and degraded—such as missions, ragged schools, and reformatories—have proceeded from very different influences; and a philosophy embracing the facts which they contemplate, must dive deeper into human nature, and

object to any statement which may leave the impression, that there can be a more philosophic method than that which begins with Induction, and thence, after the discovery of the law, goes on to Deduction. It is only by inductive mechanical investigation, that we can determine what truth there may be in the distinction between the "Dunamis," the "Entelechy," the "Energy," and the "Ergon." That there must be truth in these deductions, is evident from the circumstance, that the latest mechanical philosophy, in the hands of such men as Professor W. Thomson and Mr Ranken, is obliged to draw the distinction between "Capacity," "Potential Energy," "Actual Energy," and "Work." It is only by an inductive mental science, that we can determine what truth there is in these distinctions in regard to mind (and there is truth in them), and what in the "End," the "Habit," and "Moral Syllogism." As to the "Moral Syllogism," it proceeds on the fundamental moral law, which, as a major, underlies all our moral reasonings.

probe its actual condition more faithfully, than the academic moralists of Scotland ever ventured to do. Mr Veitch very properly remarks, in a foot-note: "The great fact of man's actual condition, as the member of a lapsed world—the peculiar ethical motives of reverence and love for a Person who has exemplified the moral law in absolute perfection, and done so in the creature's behoof—and all the questions connected with the adjustment of the results of the ordinary Christian ethics—are unnoticed by Mr Stewart, or, in general, by Scottish ethical speculators of note." As Mr Veitch has found space, from time to time, to refer, in his Memoir, to writers of his own Hamiltonian school, he might also have spared a sentence to state, that this defect was supplied by Chalmers, who is reckoned, wherever the English language is spoken, an ethical writer of note. It is an interesting and encouraging circumstance, that the majority of the professors of Morals in the Scottish colleges at this present time, have avowed in their writings a belief in the doctrines of sin and atonement, and, we presume, teach them in their classes. We hope that it will never be tolerated again in Scotland, that any professor of moral science should inculcate, that man is subject to moral law, without adding that he has disobeyed it.

It is very evident that the Scottish academic moral writers of last century, while they pay a dignified respect to Christianity, have kept at a distance from its profound peculiarities. Without meaning to excuse this deficiency, we may yet affirm that some incidental advantages have sprung from this *reticence*. It was certainly better that they should have kept at a respectful distance from Christianity, than that they should have approached it only, like the great German metaphysical systems, to set all its truths in rigid philosophic framework, or to absorb them all within themselves, as by a devouring flame. But the peculiar advantage arising from their method, consists in this, that they have, by induction, established a body of ethical truth on grounds independent of revealed religion; and this can now be appealed to in all defences of Christianity, and as an evidence of the need of something which philosophy is incompetent to supply. Divines can now found on those great truths which the Scottish philosophers have established, as to their being a distinct moral faculty and an immutable moral law, and then press on those whose conscience tells them that they have broken that law, to embrace the provision which revelation has made to meet the wants of humanity.

The space which we have occupied with the Mental and Moral Philosophy, precludes us from entering on the two volumes of Political Economy, now published for the first time, partly from manuscripts left by Stewart himself, and partly from notes by pupils. The views expounded will scarcely be regarded as much

advancing the science in the present day ; but they did good service when delivered for twenty years in lectures. They are still worthy of being looked at on special topics ; they may form an interesting chapter in the history of the literature of political economy, and they illustrate the character of Stewart's intellect and philosophy.

An estimate of the influence which has been exercised by Stewart, may form an appropriate close to this article.

In Scotland, he increased the reputation of the Edinburgh University. Horner speaks of "many young Englishmen who had come to Edinburgh to finish their education," and not a few of these had been attracted by Stewart. He has had a greater influence than perhaps any other, in diffusing throughout Scotland, a taste for mental and moral science. We have referred to the power exercised on him by Reid ; but if Stewart owed much to Reid, Reid owed nearly as much to his grateful pupil, who finished and adorned the work of his master, and by his classical taste has recommended the common sense philosophy to many who would have turned away with disdain from the simpler manner of Reid. And here we are tempted to give utterance to the feeling, that Reid has been peculiarly fortunate in those, who have attached themselves to his school. If Stewart helped to introduce Reid to polite society, Sir William Hamilton, by his unmatched logic, and vast erudition, has compelled philosophers, to give him—notwithstanding the somewhat untechnical character of his writings—a place in their privileged circle. By his expositions of Reid, and his own independent labours, Mr Stewart aided in throwing back a tide of scepticism, which had appeared in France in the previous century ; in England toward the beginning of the eighteenth century, on the back of the licentious reigns of Charles II. and James II. ; and in Scotland, about the middle of that century. It appears from letters of Dr John Gregory, published in Forbes' *Life of Beattie*, that atheism and materialism were about that time in high fashion, and were supported by many who used the name of Hume, but who had never read his works, and were incapable of understanding them. This tide came to a height about the time of the French Revolution, and it was one of the avowed aims of Stewart, "to stem the inundation of sceptical, or rather atheistical publications, which were imported from the Continent." Nor is it to be forgotten, that Stewart directly by his lectures and indirectly by his pupils, contributed as much as any man of his age, to diffuse throughout Scotland a taste for elegant literature, and enlarged and liberal opinions in politics.

As to England, Sir J. Mackintosh, writing to Stewart in 1802, speaks of the want of anything which he could call

purely philosophical thinking; and Horner, in 1804, declares, that the highest names in the estimation of those in the metropolis, who felt any interest in speculative pursuits, were Hobbes and Hartely. Such works as the *Moral Philosophy of Paley*, were fitted to lower still farther, rather than elevate, this taste. It was altogether then for the benefit of English thought, that Stewart did become gradually known in South Britain, where his elegant style, his crowning good sense, and the moderation of his opinions, recommended him to many who had imbibed as great an aversion to Scotch Metaphysics as ever George III. had. There are still persons who abhor the infidelity of Hume, and who despise the plainness of Reid, who suspect the rhetoric of Brown, and are frightened by the bristling nomenclature and logical distinctions of Hamilton, but who are attracted by the writings of Stewart, which are felt to be as pleasing and as regular as their own rich fields bounded by hedge rows. In England he has so far been of use in creating a philosophical spirit, where none existed before, and in checking the utilitarianism of Paley. He is also entitled to a share of the credit, of the great measures of reform, which such pupils as Horner, Brougham, Lord John Russell, Palmerston, Jeffrey, and Lansdowne, have carried in Parliament. Perhaps these eminent men have never estimated the amount of wholesome impulse which they received in early life from the prelections and lofty character of the Edinburgh professor.

In France the influence of Reid and Stewart has been considerable, and has been of the most beneficial character. In that country, Locke's philosophy, unfortunately introduced by Voltaire, and accepted in its worst side, had wrought only mischief, partly by its drawing away the attention of thinkers from the more spiritual philosophy of Descartes, and partly by its tempting a set of speculators to derive all mens ideas from sensation, and to deny the existence of all ideas which could not be derived from this source,—such as the idea of Moral Good, of Infinity, and of God. This wretched philosophy,—if philosophy it can be called—was one of the fatal powers which operated to give an evil direction to the Revolution, and prevented good from issuing out of it. After Sensationalism—which used, but only to abuse, the name of Locke—had reigned for more than half a century, there appeared a reaction led on by M. Royer Collard, who began in 1811 to lecture at the Normal School. It is a most interesting circumstance, that in conducting this war against the debasing systems which prevailed, he betook himself to the philosophy of Reid and Stewart. Exercising a considerable influence in himself, Royer Collard has had a more extended sway through his pupils, especially Victor Cousin and Theodore Jouffroy. In the

course of years, the works of Reid were translated into French, with an admirable historical and critical introduction, by Jouffroy. So early as 1808, the first volume of Stewart's Elements was translated into French by M. Prevost, of Geneva; and of late years M. Peisse, has translated the other two volumes of the same work. It is now many years since Stewart's Outlines were translated into the same tongue by Jouffroy, who has prefixed a preface of great judgment and acuteness. It thus appears, that the great reaction in favour of sound philosophy, commenced by Royer Collard, and conducted by Cousin and Jouffroy, has made large and profitable use of the Scottish school, and rejoices to acknowledge its obligations to Scotland. No doubt, it has also called in aid from other quarters. Cousin has been indebted to the school of Kant, as well as to the school of Reid, and has derived some of his favourite principles immediately from the great metaphysician of his own country, Descartes; and he has besides carefully examined the human mind, in an inductive manner; and he has been able to give a unity to these materials, because he is possessed of great original genius, acuteness, and comprehensiveness of mind. We are sometimes inclined to think, however, that he has got the most precious element in his eclectic system, from the school of Scotland. We are greatly gratified to observe, that after he had been drawn aside for a time from his attachment to the Scottish philosophy, by a later affection for German Transcendentalism (this is very visible in his course of lectures delivered in 1828 and 1829), he is now returning to his first love,—and this at a time when Scotland is rather forsaking the inductive method, and turning its regards towards the *à priori* method of Germany. We regard Cousin's review of the Scottish school, as the most faultless, as it is certainly the most generous, of all his historical criticisms. In his review of Locke, he has scarcely done justice to the Essay on the Human Understanding, which he always judges from the consequences to which the system led in France; in his review of Kant, he has not always been able successfully to wrestle with that powerful logical mind; but in his review of the Scottish Metaphysicians, he has shown a most hearty appreciation of their excellencies, while he has offered strictures which are very commonly correct. In the preface to the last edition (1857) of his volume on the Scottish philosophy, he declares that the true modern Socrates has not been Locke, but Reid, that modest and laborious pastor of a poor Scottish parish, who, after passing seven years in the study of himself, in a profound retreat, came forth with a full consciousness of his enterprise, to accomplish a revolution at once great and durable.

"Kant," he says, "has commenced the German philosophy, but he has

not governed it. It early escaped him to throw itself in very opposite directions. The name of Kant rests only on the ruins of his doctrines. Reid has impressed on the Scottish mind a "movement less grand, but this movement has had no reactions."

Yes, he says, Reid is a man of genius, and of a true and powerful originality; so we said in 1819, and so we say in 1857, after having held long converse with mighty systems, discovered their secret, and taken their measure. We feel proud, we confess, of the eulogiums which have been pronounced on Scotland, not only by Cousin, but by Jouffroy and Remusat. But these philosophers have scarcely seen, after all, wherein lies the peculiar strength of the Scottish nation. This is not to be found in its systems of moral philosophy, but in its religion, of which the high moral tone of its philosophy is but a reflection, which would soon wax dim and vanish were the original light extinguished;—nay, in remembering that Kant was descended from Scottish parentage, we have sometimes thought that his high moral precepts may be also a reflection from the same light. Often, we should think, when M. Cousin has looked around him on these scenes of revolution through which France has passed, and on those terrible attempted assassinations which burst out from time to time, and that grinding military despotism which *still* abides, must he have seen that his country needs something deeper and more influential than any system of moral science, even though it should be as pure and elevated as that which he has been living to inculcate.

In Germany Stewart has been little known, and has exercised no power for good or for evil. The only English philosopher familiarly referred to in that country is Locke, and even he is known, we suspect, more through his French consequences than from the study of his work. The German professors speak of him, under the name of Locké, as the representative of sensationalism, overlooking the constant reference which he makes to reflection as a separate source of ideas, and to the lengthened account which he gives of intuition—a much juster account, in some respects, of its function than that given by Kant or Schelling. The great English ethical writer, Butler, who has established for ever the great truth of the supremacy of conscience in the human constitution, is either altogether unknown in Germany, or referred to by such writers as Tholuck only to show that he is not understood or appreciated. The only Scottish metaphysician thoroughly known in Germany is David Hume. Reid is occasionally spoken of, only to be disparaged in his system and its results. Stewart is scarcely ever named. We must be allowed to regret this. Such a body of carefully inducted fundamental truth as we have in the philosophy of Reid

and Stewart, is precisely what was and is needed to preserve thought from the extravagances of the transcendental schools in the last age, and now, in the natural recoil which has taken place since 1848, from the tide of materialism which is setting in so strongly, and with no means or method of meeting it. The philosophy of Germany must ever go by oscillations, by actions and reactions, till the unfortunate critical method of Kant is abandoned, and the inductive method is used to determine the rule and law of those *a priori* principles of which so much use is made, while there has been so little careful inquiry into their precise nature and mode of operation.

This may be the proper place for referring to the relation in which Stewart stood toward Kant. We have already expressed our regret that Stewart should have entered on a criticism of Kant without a deeper acquaintance with his system. No doubt it might be retorted, that the criticisms of Stewart upon Kant are not more ignorant and foolish than those of the disciples of Kant upon Reid; but it is better to admit that Stewart committed a blunder in his review of the Kantian system. Some have supposed that, if he had known more of Kant, he would have formed a totally different opinion of his philosophy. And we admit that a further acquaintance with Kant's works would have raised Kant in his estimation—would have kept him from describing his nomenclature as “jargon,” and his philosophy as “incomprehensible”—from affirming that Kant has “thrown no new light on the laws of the intellectual world”—would have shown him many curious points of correspondence between the views of Kant and the profoundest of his own doctrines, and have enabled him, when he did depart from Kant, to give fair and valid reasons, and thus to help in what must be one of the tasks of philosophy in this age—the work of taking from Kant what is good and true, and casting away what is evil, because false. While we admit all this, we are convinced at the same time that Stewart would never have given an adhesion to the peculiarities of Kantism. He would have said, My method of induction is better than your method of criticism, and my account of the intuitive convictions of the mind is correct, when I represent them as fundamental laws of thought and belief; whereas you are giving a wrong account of them, when you represent them as *a priori* forms imposing on the objects in all cognition something which is not in the objects. We cannot conceive him, in any circumstances, allowing to Kant (as Hamilton unfortunately did) that Space, and Time, and Causation are laws of thought and not of things, and may have merely a subjective existence. His caution, his good sense, and his careful observation, would have prevented him from ever falling into a

system of nescience such as that to which the relentless logic of Hamilton has carried him, founding, we acknowledge, on premises which Stewart as well as Kant had furnished. He would have adhered, after knowing all, to his decision :—

“ We are irresistibly led to ascribe to the thing itself (space) an existence independent of the will of any being.” It is an “ incomprehensible doctrine which denies the objective reality of time.” “ That space is neither a *substance*, nor an *accident*, nor a *relation*, may be safely granted ; but it does not follow from this that it is nothing objective.” “ Our first idea of space or extension seems to be formed by abstracting this attribute from the other qualities of matter. The idea of space, however, in what manner formed, is manifestly accompanied with an irresistible conviction that space is necessarily existent, and that its annihilation is impossible,” etc. He adds, “ To call this proposition in question, is to open a door to universal scepticism.” —(*Diss.*, pp. 596, 597.)

The great work which the school of Reid has done, consists in its careful investigation, in the inductive manner, first, of the faculties of the mind ; and, secondly, and more particularly, of man's primary and intuitive convictions. For this they ought to be honoured in all time. Kant did a work similar to this last, but in a different manner. Rejecting (as Reid had done) the combined dogmatic and deductive method of Descartes, he introduced the critical method, affirming that Reason can criticise itself, and proceeding to criticise Reason by a kind of logical process of a most unsatisfactory kind. Criticism has succeeded criticism, each new critic taking a new standing-point, or advancing a step farther, till Hegel's system became the *reductio ad absurdum* of the whole method of procedure inaugurated by Kant. We admit that Kant was right in affirming that *a priori* principles should be examined before they are assumed in philosophical investigation. We are not at liberty to assume a first truth till we have shown it to be a first truth ; and we have no right to use it in argument or deduction till we have determined its precise nature and law ; but this is to be done, we maintain, in the inductive manner, with its accompanying analysis and exclusions. The Scottish school commenced this work, but they do not profess to have completed it. Stewart everywhere proclaims that it is to be done by the combined efforts of successive inquirers, pursuing the same method for ages.

Reid and Stewart nowhere profess to give a full list, or even a rigid classification, of the intuitive convictions of the mind. All that they affirm is, that those principles, which they have seized for the purpose of meeting the scepticism of Hume, are and must be intuitive. They do not even pretend to give a full account of these, or to express them in their ultimate form.

They vacillate in the account which they give of them, and in the nomenclature which they employ to denote them. They draw no definite distinction between cognitions, beliefs, and judgments. They treated of the faculties, and also of the principles of common sense, but they do not tell us how the two stand related to each other. And here we may be permitted to observe, that we look on these fundamental laws as being the necessary laws of the faculties regulating all their exercises, but not as laws or principles before the consciousness; and they are to be reflexly discovered as general laws only by the induction of their individual acts. Reid and Stewart do not even tell us what are the tests by which their presence may be detected: these we hold to be, first, as Aristotle and Locke have shown, self-evidence; and, second, as Leibnitz and Kant have shown, necessity and universality. Such defects as these they were quite willing to confess in that spirit of modesty which was one of their highest characteristics; and to any one complaining that they had not settled every point, they would, as it were, say, Go on in the path which we have opened; we are sure that there is more truth yet to be discovered, and rejoice we must and will, if you succeed where we have failed, and raise a little higher that fabric of which we have laid the foundation.

Metaphysics, in spite of the prejudice against the name, are at present in a state of revival in this country. A greater number of works on speculative philosophy have issued from the press during the last dozen years, than in any similar period of the history of Britain. The mysteries into which even physical science is conducting us, the deep questions casting up in all branches of inquiry, and, above all, the religious struggles which are working in many a mind, all land in metaphysics. We are anxious that this period of respite to mental philosophy should be properly employed. If this is not done, it must be followed by a time of terrible reaction, in which men revenge themselves for the deceit which has been practised on them. That reaction has already set in powerfully in Germany, where a pretentious idealism has been succeeded by an indifference and a tendency to a very low and loose style of thinking (just as rationalism or intuitionism has succeeded to Puseyism in Oxford), and where the religious community is at present inclined to turn away from all philosophy, as tending to infidelity, and will not be aroused, we suspect, till they see how fast and how far materialism has progressed, and are *then* made to feel that they have no sober philosophy to meet it. We fear that the flow in this country, at present at its height, may be followed by a similar ebb, in which all will be left barren as a sandy beach. It is with deep concern that we observe the taste,

among metaphysicians proper, to be almost exclusively in favour of an *a priori* style of speculation, varied only by historical disquisitions in which all systems are arranged into a few artificial compartments, such as subjective and objective, idealism and sensationalism ; while the study of inductive mental science is abandoned very much to the mere physiologist, who never comes in sight of the deeper convictions of the mind. We feel that very high interests, moral and religious, as well as philosophic, are involved in the proper conduct of metaphysical investigation at this instant. We confess that we should like to see it carried on in the very manner and spirit of Reid and Stewart. But let us not be misunderstood. We are not advising a retrogression, but an advance ; we are not recommending that metaphysicians should stop where Reid and Stewart stopped, or do over again what they have done, and done so well. What we ask is, that, commencing where they closed, they should do in this age what Reid and Stewart did in their age. Appeal there is enough, in these times, to *a priori* principles ; and the special want of the time now arrived, is a determination of the precise nature of such principles, with the view of settling what intuition can do, and, as no less important, what it cannot do.

- ART. VIII.**—1. *The Right Use of the Early Fathers ; Two Series of Lectures delivered in the University of Cambridge.* By the Rev. J. J. BLUNT, B.D., late Margaret Professor of Divinity. London : John Murray. 1857.
2. *An Introduction to the Study of Dogmatic Theology.* By the Rev. ROBERT OWEN, B.D., Fellow of Jesus College, Oxford. London : Joseph Masters. 1858.
3. *Christianity in the Three First Centuries ; Historical Lectures delivered at Geneva in February, March, and April 1857.* By Dr MERLE D'AUBIGNE, Dr BUNGENER, Count GASPARIN, and M. VIGUET. London : James Nisbet and Co. 1858.

LET no injustice be done to the Fathers ; nor let either the theologian or the philosopher of the nineteenth century withhold from his predecessor of the fourth whatever of honour may be due to his name. If we cannot afford to be fair, we may begin to suspect the goodness of our cause or the purity of our motives.

Truth does not change with time. It may expand, but it cannot alter nor grow rusty ; it does not die, nor need to be buried out of sight. Neither does it know old age, but is always young, always elastic, always fruitful. What was once true is true for ever, though man may lose sight of it, or cease to value it. Though not, perhaps, consciously referring to it, we are always making use of it. The pearl is the pearl always, wherever it is found, and of whatever age : so the truth is always true, though written centuries ago, amid the mists and marshes of cloudier ages ; and the falsehood is always false, though elaborated amid the sunshine of a scientific age, and adapted to the "progress" and intellectual enlargement of these bolder and, as is supposed, less fettered times.

Error is unjust and irritable : truth is calm and generous, hating injury, and loving to do justice to an adversary. It will profit us nothing to wrong the memories of those who, even though they may have spoken untruly, were yet as free to speak and write as we, and who are as well entitled to a fair judgment upon what they have promulgated as we. If, as has been said, all violence is loss to him who makes use of it, no less is all unfairness a wound inflicted upon truth.

There is a sect in our day (as in other days) which refuses to judge the Fathers, and avows itself a mere listener to their instructions ; nay, which refuses to listen to anything else (even the Bible), save in so far as in harmony with patristic teaching. Of

course these Churchmen must go the length of *understanding* the propositions of doctrine that come before them, otherwise they could not discover the divergence; but they *understand*, not in order to exercise free judgment, but only in order to *submit*. Patristic infallibility is their axiom, either latent or proclaimed. Submission to the code of patristic law is the foundation of their ecclesiastical commonwealth. *Patrolatry* with them is a virtue; *Bibliolatry* a crime and a superstition.

The sad assumption here is, that the Scriptures are so written as not to be intelligible in themselves; and, if so, that they do not furnish a foundation for faith to rest on: for if an interpreter be necessary, then he becomes our real oracle, and his interpretations our authentic and inspired Scripture. Such was Joseph's exposition of the Egyptian's dream; such was Daniel's interpretation of the Babylonish writing on the wall.

The assumption is, moreover, as untrue as it is sad. The Bible is a considerably more intelligible book than the works of the Fathers, and the latter stand much more in need of comment and elucidation than the former. It would require some boldness to maintain the opposite; yet this is the very position tacitly maintained by thousands, and used as the basis of their operations in their defence of ecclesiastical superstition. Confuse and mystify the formula as they like, when reduced to a simple equation, it is just the intelligibility of the Fathers *versus* the intelligibility of the Scriptures.

Of course, such an attempt to prove Scripture unintelligible must have an object in view. Such an assault upon what is Divine would not have been thought of, had there not been a necessity for it. That necessity is the plain antagonism of Scripture to systems which they are committed to uphold. Bunsen says truly, "The antagonism between the Reformation and the Mediæval Church is irreconcilable." No less great is the antagonism between the Apostolic and the Mediæval Church. It is their *dread* of Scripture that has driven these men to set up a rival. Had it been as clearly *for* them as it is *against* them, no "catena Patrum" would have been forged, nor any grave denunciations heard against the peril and the irreverence of studying the Bible without ecclesiastical help. The testimony is so explicitly adverse, that means must be taken to silence the witness, or falsify his witness-bearing. Say what the arguers will, this is the secret (in many cases unconscious) meaning of the arguments in favour of patristic authority.

Now, my good friend of the cloister or the church, do you really see the bearing of your own arguments? Do you wish me to understand you as saying that you, by means of the Fathers, can make plain that which the Holy Spirit has made

obscure? Do you mean to say that God has failed to make Himself intelligible to His creatures, and that you must therefore step in to make that light which God has made darkness?

Be the Fathers ever so excellent and sound, we are under no bond to receive them or their sayings. We prefer the plain Word. We find it more powerful, and much more easy to understand; possessing, moreover, a unity of purpose, meaning, and teaching, from beginning to end, which we in vain seek for amid the dissonances and contradictions of Irenæus, Tertullian, Jerome, Chrysostom, and Augustine.

More discreet ecclesiastics moderate their tone. Whether they are not, after all, quite as thorough *Patrists* as the others, we do not say. They are, however, more moderate in spirit, and less extreme in statement. What they claim for the Fathers is not authority to enunciate doctrine, but to *test* it. Their writings are *tests* of doctrine, no more. To their interpretations of Scripture we must bring ours; and if we do not find ourselves in collision with them, we are at liberty to hold what we have excogitated. Thus much we are free to think for ourselves, or to study Scripture for ourselves. In so far as the Fathers have not thought for us, we may think freely, and with some hope of being original without being unsound.

Such is the liberal concession made to us by some who disclaim Romish and Anglican intolerance. They would call this a large, almost an undue concession, and ask us to give them credit for singular fairness of purpose and of judgment.

We are not disposed to do so. They seem to us to wish to serve two masters, and to stand well with two ages. Their two masters are the Church and Christ; the two ages are the first three centuries and the last three of our era. Certainly the two masters ought to have been but one; and in serving the Church, they ought to have been serving Christ. But history tells another tale. The interests of these two masters have not been identical, nor their rules of service at all times in harmony. He who would devote himself to the historical Church of Christ, must give up the attempt to serve Christ Himself; and he who would agree with and obey Christ, must break with the external Church, and venture to differ from the authorised exponents of its creeds and laws. The two ages, in like manner, ought to have been at one, both dogmatically and ecclesiastically; so that it would have been the same thing for us to say, I believe what the third century believed, as to say, I believe what the sixteenth century believed. But the diversity between these two periods is quite appalling; so that one is sometimes led to put the question, if Origen and Cyrill were Christians, how can Luther and Cranmer be so? or, if Luther and Cranmer were Christians, how

could Origen and Cyrill have been such?¹ It is in vain to attempt to stand well with both. We must make our choice between them.

We do not mean to deny that there is a difference between authoritative *oracles* and authoritative *tests*. A test is negative, an oracle is positive. A test possesses no self-originating power of utterance, but simply answers doubtful questions. Thus far there seems to be a restriction of patristic authority, and a lowering of ecclesiastical pretension. But one feels still that acquiescence even in the restriction is a large and perilous admission for truth, and Scripture, and liberty of thought.

A test is of small service if it be not absolutely certain. A chemist's tests are infallible. If they were not, science would discard them as useless. A test, too, must be complete. It must not admit of appeal to other tests more complete or more certain. It must of itself decide the point to which it is applied. To concede such a testing authority to the Fathers, is in reality to concede everything. If their weights and measures are to be assumed as infallible in the weighing of truth and error, then they are *judges*—supreme judges—in all cases on which they have given any decision. To grant a *testing* power, is to grant a *judging* power,—a judging power to which every Christian must surrender himself, and from which there can be no appeal. The maintenance of patristic authority to *test* doctrine, must involve, as a preliminary, patristic *infallibility*. If that can be proved, the testing power will follow as a matter of course.

Assuming the *theory* of patristic testing, still the *practice* is rather troublesome. Even to the most resolute advocates of the Fathers, the process must frequently be difficult, and rather of an unsatisfactory nature. On some points the Fathers have not determined at all; and this leaves the unhappy Church, or more unhappy Christian, to the mercy of individual judgment. On other points the Fathers have given such an uncertain sound, that we can apply the infallible test only in a very vague way, and to a very partial extent. On other points the Fathers have given such sadly contradictory judgments, that the matter in question is placed more awkwardly than any indeterminate problem,—for there ensues the conflict of opposing infallibilities. To have infallibility on one's side is most comfortable; to have

¹ We are persuaded that the more one studies the Fathers (*Augustino excepto*), and compares them with the Reformers, the more will such a question as the above most painfully press itself upon him. He will put down the rising impression, but it will recur in spite of himself. We are sorry to see Dr Merle D'Aubigne eulogising Origen as "the greatest luminary of ecclesiastical antiquity" (*Christianity in the First Three Centuries*, p. 209). Concede to Origen learning, fervour, and a self-sacrificing life; but do not canonise as a luminary one who did more to darken Scripture and to obscure some of its fundamental truths than any Father of the first five centuries.

it against one is by no means so ; but to have it both *for* and *against* is, of all predicaments, the most awkward in which man was ever placed. There is nothing like it in the known world, whatever there may be in the unknown. It is a position from which neither faith nor reason can assist in extricating us. To speak of doubt in such a case is absurd ; it is something far worse than doubt. To speak of halting between two opinions is a total misnomer ; it is to be torn in pieces between two divellent omnipotencies. Urged by infallibility to receive a doctrine, and urged by a counter infallibility to reject, the miserable soul must feel that of all perplexities this is the most hopelessly perplexing, and of all mental tortures this is the most terrible. There is no word in philosophy, or science, or Scripture, to denote such a state of mind.

This is no picture of the fancy. It is something actual and real, as the reader of the Fathers will speedily discover.

Suppose that I have leanings towards Episcopacy ; and that I gather, so far as my fallible judgment leads, that the bishop is the apostle's successor, and by his office exalted above the presbyter. I must have this notion of mine tested by the Fathers. I go to Cyprian, and there I find my opinion corroborated to the full. If I am to believe Cyprian, there can be no doubt that Episcopacy is the true government of the Church. But, wishing to apply more tests than one, I go to Jerôme. There I find the broadest affirmations against the superiority of the presbyter.¹ He teaches me Presbyterian parity. What am I to do ? which of these tests must I abide by ? If both are infallible, then my position is certainly most unenviable. Suppose I am disposed toward Arminianism. I must *test* my opinion, which I may have gathered from Scripture. I go to Augustine, and there I find Arminianism attacked in almost every page, and Calvinism maintained with a scriptural precision and metaphysical acuteness which Calvin himself never surpassed. If I am to believe Augustine, the very foundations of grace are associated with God's predestinating purpose and sovereign election. My Arminianism gives way before this test. But I go to Origen, and I find there Arminianism, and something more. I find Universalism in its widest sense—

“ Ill annihilate

The restoration of the angels lost,
And one salvation universal, given
To all create.”²

¹ “ Idem ergo est presbyter, qui et episcopus ; et antequam, diaboli instinctu, studia in religione fierent, communi presbyterorum consilio ecclesiæ gubernabantur. Postquam vero unusquisque eos quos baptizaverat, suos putabat esse, non Christi, in toto orbe decretum est ut unus de presbyteris electus, superponeretur ceteris,” etc.—*Comm. ad Titum*.

² Bailey's Festus.

If I am to believe Origen, I must be more than an Arminian ; and I must, moreover, believe that nearly one-half of what Augustine has written is as anti-apostolic as it is untrue. Of what avail to me is the patristic test ? It serves me in no stead at all, save to distract and to confound me. Suppose I am satisfied in my own mind, from Scripture, of the truth of the Trinity : I go to Athanasius, or Basil, or Didymus, and I am fully confirmed in my judgment. But I turn to Origen or Dionysius, and I learn from them the inequality of the three persons in the Godhead, and that the Holy Spirit is not God, as is the Father, and as is the Son. Am I then to acknowledge in Athanasius infallible truth, and in Dionysius infallible heresy ? Suppose, once more, that I am satisfied from Scripture, that without holiness no man can see God, and that a holy life, or at least decent morality, ought to be found in a Christian, specially in a canonised saint. I look to John Chrysostom, and find, both in his life and writings, all that I can desire to confirm my judgment. It is well. Morality and infallibility in him thus go happily together. But I turn to *Saint* Cyrill of Alexandria, and I find in him a villain of the reddest dye, unfit to breathe the clear air of this sunny earth ; I turn to *Saint* Damasus, and I discover him wading through blood to the Pontificate, or revelling in the brothel, the victim of lust and wine ! How is he to test my moral principles ? Or whether am I to believe Damasus or Chrysostom, Cyrill or Bernard ? *

These results arise from an undue deference to the Fathers. Had their friends just allowed their writings to stand for what they were intrinsically worth, no such mischief would have ensued, and no recoil upon themselves taken place. But these friends have claimed for them a reverence, to which many of the Fathers made no pretensions. By this improper and unwise exaltation of their favourites, they have led to an opposite depreciation of them, and provoked a scrutiny, which, if it has not always been fairly conducted or impartially summed up, has this to urge on its own behalf, that it was forced upon the Church by the extravagant laudations, and arrogant pretensions of patristic partisans. A man who by his weak admirers has been too lavishly praised, must endure the compensation of being immoderately depreciated.

Daillé and Barbeyrac have incurred no small censure for their exposure of the Fathers, and an unscrupulous one-sidedness has been ascribed to them by some writers of learning. They form the text-books of Professor Blunt's Lectures "on the Right Use of the Early Fathers ;" and the reader of these lectures might almost surmise that they were meant more as a running refutation of these formidable Frenchmen, than as direct discourses on the Fathers themselves. Daillé certainly has encountered in

Professor Blunt one who could do considerably more than sneer or snarl at him, as some have done when they could do no more; but the careful and elaborate character of the Professor's volume is enough to indicate that, in his estimation, Daillé was no mean antagonist. Learning and labour have been expended to the utmost in this vindication of the Fathers. It will be difficult for any succeeding writer to say more in their defence, or to plead their cause more strenuously, with larger appliances, or with greater likelihood of success, than the "Margaret" theologian has done. Though not an unconditional nor superstitious apologist, he brings all his learning to bear upon their defence, leaving nothing unsaid which might set forth their perfections or cover their defects. He would not like to be committed to all that they believe; but he cannot suffer a voice to be lifted against them, and there are few points of the multifarious patristic creed which he would altogether quarrel with—save, perhaps, Augustine's Calvinism, to which, it is evident, he would greatly prefer Origen's Universalism, if he were compelled to make a choice.¹

There is, however, very much more to be said in favour of Daillé than the "Margaret" professor will allow. Into the minute questions as to fairness or unfairness of citation or application, we cannot enter; but the following remarks seem quite sufficient to meet, at least, most of the general charges brought against the Parisian pastor. One of his great designs is to lower, or, if

¹ Indications of this same peculiar admiration for the Fathers, without absolute assent to their dogmas, we find in Trench, whose Notes on the Parables and Miracles are an excellent synopsis of patristic expositions, and a good translation of the best of Olshausen's Criticisms. In one of his foot-notes he quotes the following sentence from Menken:—"Many so-called Church historians (authors of *Ancient Christianity* and the like), ignorant of the purpose and of the hidden glory of the Church, have their pleasure in the tares, and imagine themselves wonderfully wise and useful, when out of Church history, which ought to be the history of the light and the truth, they have made a shameful history of error and wickedness. They have no desire to edify, to further holiness or the knowledge of the truth, but, at the expense of the Church, would gratify a proud and ignorant world."—(*Notes on the Parables*, 94.) The fling at Mr Isaac Taylor, within brackets, seems to be Trench's, not Menken's, and betrays the animus of the writer,—if, indeed, that were not sufficiently indicated by the uncharitable acerbity and unphilosophical childishness of the extract itself. Menken's theory, thus endorsed by Trench, is that we are to falsify history rather than expose the errors of the Fathers. Mr Trench's love for Augustine seems not to have overcome his dislike at Calvinism any more than Professor Blunt's; and in his Synonyms of the New Testament (p. 80), he has an attack on *gratia irresistibilis*, as that by which man is turned "into a mere machine," and "by which, *volens volens*, he is dragged to God." It is not pleasant to observe Mr Trench turning thus aside from his way, in order to have a stroke at "evangelical" religion; and elsewhere turning aside to praise Krummacker's (the elder) Parables, in order to have a fling at the "popularity" of the other Krummacker, author of *Elijah the Tishbite*. The "Parables" thus lauded are poor—very far inferior to the other work above named.

you will, to destroy the credit of the Fathers as theologians and reasoners. Granting that Daillé's specimens are not adequate representations of the Fathers, and that a volume, much larger than his, might be compiled with quotations as noble as the others are unworthy, this is nothing to the point. His design was not to defame the men by a one-sided representation, which should embody only their faults, not their excellencies: his object was to show that, even though the men were capable of writing what was true and good, they had, by the amount of the untrue and the evil embodied in their pages, shaken irretrievably all confidence in their judgment, and damaged beyond remedy their claims to authority in the Church. The men who could give utterance to such sentiments as they have done in some places, who could indulge in such speculations, who could seriously propose such interpretations, who could promulgate such doctrine as they have done, are not entitled to any pre-eminence, as an authorised ecclesiastical court of appeal, to any deference as a standard of doctrine, or even to any weight as authentic preservers of apostolic teaching. So wide is their divergence from manifest Scripture statement, so extravagant their speculations, so notorious their heresies, so contradictory their opinions, so crude and poor their expositions, that no amount of truth, or beauty, or acuteness, or eloquence, can so compensate for or balance ascertained flaws and errors, as to restore them to the confidence of Christian men.* They may be studied still for the many precious things contained in their noble folios; but these good things cannot be set down as "redeeming qualities," in so far as their *authority* is concerned. The discovery of these enormous and frequent blemishes undermines our trust, even though it may not destroy our admiration or our love.

As to the number and grave nature of these flaws, we shall not say much. This only we may, not invidiously, but with all honesty, remark: that it would be impossible to cull from any other set or school of authors such numerous and flagrant absurdities as have been gleaned from the Fathers. Take the Puritans, as a school, and sit down to study them for the discovery of flaws and errors. Deal with them as Daillé has dealt with the Fathers; deal with them more unsparingly, or unfairly, as Professor Blunt would say; gather into one volume all the misinterpretations, and conceits, and words of coarse taste, with which they are affirmed to abound; and will you produce anything of the kind which Daillé has done? Will the whole collection amount to the one-tenth of his? Will the specimens produced at all equal his in grotesqueness, and anility, and extravagance? Or take some representatives of the Fathers

and Puritans, say three against three—Jerome, Augustine, and Chrysostom, on the one side, and Owen, Goodwin, and Manton, on the other; employ a lofty Churchman to select all the deformities of the Puritan trio, and an “irreverent Dissenter” to gather all the blemishes of the patristic trio, and there can be no doubt that the compilation of the latter would immeasurably out-bulk that of the former. Grant to the Fathers the genius of being able to speak things bright and noble, you must grant them also the talent of saying things stupid, and wild, and ridiculous; while, if the Puritans are denied the former kind of genius, they must certainly be acquitted of the latter. If they have written fewer *notabilia* for admiration, they have written fewer *memorabilia* for censure.

Yet, indeed, we do not admit the former. Puritan authorship will suffer nothing from comparison with patristic. The dogmatic theology of the former, estimated in what way you please, will appear a well-knit, well-reasoned, systematic thing, when compared with the loose dogmatic theology of the latter. The hermeneutics of the seventeenth century are far superior to those of the fourth. The philosophic reach of Thomas Goodwin is quite equal to that of Augustine, and the learning of Jerome is overshadowed by that of John Owen.

One remark respecting the Fathers we should like to make, as a sort of protest, in *initialibus*, against the whole theory of patristic authority. We do not believe that the Fathers are really the representatives of the Church in their different ages. Admitting that we are to listen to the voice of the Church, we deny that the Fathers are such. They represent the opinions of a certain number in their day, as Maurice represents those of a certain class in ours, or as Hoadly represented those of a class in last century, or as Jeremy Taylor represented another class in the century before; but that is all.

To call Origen, or Augustine, or Bernard, the voice of the Church, is simply to utter a historical falsehood.

In more senses than one is it a falsehood. Not only have we reason for believing negatively that they were not so; we have many curious hints in ecclesiastical history, warranting us in affirming that they were the chosen instruments made use of for silencing the true voice of the Church.

The true voice of the true Church has not always been uppermost on earth, nor most loudly heard.

. . . . Her voice was ever soft,
Gentle, and low.

Like Him whom she calls Master, she “did not cry, nor lift up, nor cause her voice to be heard in the street.” Hence there was not much difficulty in drowning it, and in substituting another

voice, superior in power of vociferation, in its place. The ecclesiasticism which usurped the throne of the Cæsars soon supplanted the true Church of God. Of this regnant ecclesiasticism the Fathers were the accredited delegates and authentic expounders. For the representatives of the true Church—the Church of Christ, the Church of the Apostles—we must look elsewhere. Possibly they may be hardly discernible or discoverable, yet they ought to be searched for.

Shall we say that Origen represented the Church of Christ in his day?—Origen, that denied nine out of ten vital points of the Christian faith! Impossible. He was the personification of learning, labour, and endurance; but as for the knowledge of Him who finished the propitiation on the cross, it is not to be gathered from his pages. Some unknown Alexandrian, without philosophy or learning, but with simple faith in Him who died and rose, would have been the true witness for Christ, and the true representative of His Church. In spite of the honour paid to him as the most learned of the Fathers, and in spite even of the eulogies heaped upon him by Merle d'Aubigne, we are constrained to turn aside from him as a specimen of the Church, and to look on him as a denier of much of the truth which the Church, if true to her name, could never have lost sight of.

Who represents the Church of Christ in the fourth century? Ambrose of Milan? He teaches holy lies and the worship of dead men's bones. Are his words then the voice of the Church, or the Apostles, or of Christ Himself? Saint Damasus? He who first coerced the empire into the worship of Mary as the Mother of God, in room of Cybele, who had hitherto been worshipped with the same honours as Mother of the Gods? Basil, surnamed the Great? He, the author of the liturgy in which Mary is prayed to as a goddess, and as the Mother of God? Cyrill of Jerusalem? He is a childish fanatic, a sacrilegious stealer of the Church's gold and silver. Jerome of Bethlehem? He is the learned child of self-righteousness and superstition. The voice of Christ's Church was assuredly not heard in these. Each doubtless represented a class; but none of them represented the Church. Who is the Church's voice in the fifth century? Cyrill of Alexandria? He who headed a ruffian mob, and cheered them to the slaughter of 40,000 Jews, and smiled as they stripped naked and tore in pieces the young Hypatia? Let not his title, "Champion of the Virgin," be denied him; for never did a Pagan more vehemently maintain the worship of Cybele, or

¹ It is of this vile transaction that Toland, the infidel, takes advantage to attack Christianity. He published, in 1730, a book called "Hypatia, or the History of a most beautiful, virtuous, learned, and accomplished lady, who was torn to pieces by the clergy of Alexandria, to gratify the cruelty of their Archbishop, undeservedly styled Saint Cyril."

Maia, or Juno, than he does of Mary, who, by a simple change of names, had quietly come into the room of these heathen goddesses, and taken possession of their temples and their honours.

There can be little doubt that it was Gibbon's careful study of the writings of these saints and Fathers that led to his contemptuous hatred of Christianity. Being told, alike by Protestants and Papists, by Greeks and Latins, that these Fathers were the representatives, nay, the true aristocracy of the Church of Christ, the incarnation of Christianity, and the model of morality and holiness, he was naturally led to form his opinion of their religion from what he found in their works. They were the acknowledged expositors of Christian faith and practice; and they were referred to by all, without exception almost, as bright specimens of Christianity. Their history was reckoned the veritable history of the Apostolic Church from the day when the last apostle died at Ephesus. Nay more, the very Scriptures that Christians called Divine were to be understood according to the interpretations of these ancient men. Some said that the Fathers were authoritative, some said that they were merely tests, some said that every Father was infallible, others that only the universal conclave was so; but all agreed in this, that these men were the noblest in rank of all the Christian commonwealth, and that their writings contained the very cream of Christian truth; that their voice was to be listened to most deferentially, as their persons were to be approached reverentially.

All this Gibbon knew; and accordingly he looked at Christianity, just as a philosophical historian naturally would, through the medium of its acknowledged standards and representatives. He assumed the Fathers to be just what all Christians told him they were, and he judged Christianity by them. Instead of judging the Fathers by the Bible, he judged the Bible by the Fathers.

Finding in these Fathers a hideous jargon of dogmas more irrational than those of Paganism; a less pure morality than he found in the classics; the inculcation of falsehoods for religion's or the Church's sake; actions done and praised, such as either Romans or Spartans would have blushed at; he could hardly fail to deduce the conclusions that he has done, or to sketch the pictures that he has drawn.

Assuming the Fathers to be what they are generally accredited with being, and to have the authority which Romish or High Church partisans ascribe to them, it is hardly possible for a thoughtful and thorough student of them to avoid utter scepticism as to all religious truth. "If this be Christianity, give me honest Paganism." If the study of the Fathers did not find Gibbon an infidel, it made him one; and it gave to his infidelity

that cool, contemptuous acerbity which pervades his works. Identifying biblical with patristic Christianity, and either unable or unwilling to discriminate in a matter which every one said admitted of no discrimination, seeing that Apostles and Fathers were one in faith and practice, he writes as one who had found it impossible to believe that such a system could be Divine, or that it could be credited by men of integrity or intellect.

Infidelity in such a case seemed as natural as did contempt for those who could be anything but infidels. With much inexcusable error and malicious colouring of facts, there is a *latent truth* at the bottom of Gibbon's sneers, which, like a spectre from the pit, might well appal the idolaters of the Fathers, and ought to awaken to deep thoughtfulness every Christian mind.

The Apostolic Church had a succession in all ages—true and unbroken; but not necessarily visible, and not always among those whom nations have honoured or churches canonised. Liturgical calendars of saints' days, either fast or festival, are not the places in which to read the names of those who are written in the Lamb's book of life. The real Church history of many a century remains unrecorded upon earth. The thick-growing tares have been noted and registered, the wheat has ripened and been gathered in unnoticed; nay, the tares have been written of as wheat, the wheat as tares. It is now too late wholly to remedy the evil, or to re-write Church history; but the day of true history, as well as of righteous judgment, will at length arrive. The evil shall not then be known as good, nor the good as evil. Wronged names shall be fully righted; the truth and the lie shall be brought up to day, and the hidden ones of fifteen centuries shall start gloriously into honour and reward.

No history—not even that of Carthage by Rome—has been so one-sided or unjust as that of the Church. All Church annals, from Eusebius downward, are written by the dominant ecclesiasticism of the day. What then could we expect but partiality, either in eulogium or censure? We should not trust Wiseman to write a fair life either of Luther or of Mastai Feretti. "Reminiscences of four Popes" are not likely to be credited, any more than "Lives of four Reformers" would have been by the same hand. What picture of Calvin would Tomline have drawn; what history of the Reformers could come from Newman, of Covenanters from Napier, of Methodists from Robert Southey, or of Evangelicals from Henry Drummond? In His providential sovereignty, God has so ordered it, that the true Church-life should remain hidden—the name, the love, the faith, the holiness, of His genuine Israel unknown. They had none to write of them who could appreciate them, and they who could appreciate

them had neither the pen nor the voice that would be listened to or regarded.

Writing and publishing in early centuries was a formidable thing to men who had no patronage, nor wealth nor influence. They who had none of these must suffer wrongs unredressed, and hear slander heaped upon the helpless, without being able to reach the ear of the public in their defence. They might speak, but they were unheard; they might write, but they were unregarded. Voice and pen were alike useless; opinions were misrepresented; characters calumniated; names branded as identical with schism and heresy, which in purer ages would have won honour and love.

A juster ecclesiastical history is now coming to the conclusion, that many of those who have been hitherto named heretics were protestors against the errors of the age, and assailants of the pretensions of an all-powerful hierarchy. Such men as Novatian, Nestorius, Vigilantius, and Apollinaris, have not deserved the evil report which has for upwards of a thousand years, both among Protestants and Romanists, overshadowed their names. We have no account of them save from unscrupulous enemies. Their works have perished, and the fragments by which we have judged them hitherto are gathered from the pages of controversialists, whose enmity discoloured and distorted everything. It has been Rome's practice to affix the name of heretic to any one who doubts her dogmas or discredits her pretensions; nor has she greater heretics in her list than Luther and Calvin. We have given no heed to her calumnies against good men during these last three centuries; but most perversely and unaccountably have we retained her post-apostolic as well as her mediæval nomenclature. We still acquiesce in her condemnation of those whom we may call her earlier heretics, and trust her judgment both as to their opinions and their characters. We have reversed her decision which condemned Huss to the flames; but we have not reconsidered, far less cancelled, her criminalizing decrees against Apollinaris, and Nestorius, and Vigilantius.

How slowly do we learn to be just! How inveterate is the prejudice of history! Must we go to Gibbon for a true idea of that which we have so long persisted in calling "the Church?" Must we learn from him the true story of that which we have long called Christianity; but which was in fact nothing but Christian Platonism or baptized Paganism?

It is well to do justice to our own flesh and blood of the Reformation, and to hurl back the name of heretic, so liberally lavished on them by Rome. But there are others whose wronged reputations call for justice as loudly as these. In accepting the name of heresy and the title of heretic from the dominant

ecclesiasticism of ten centuries, we have joined in one of the foulest persecutions that was ever planned, persecutions against the characters of the true saints, the veritable Israel of God. We have not only authenticated the canonised pandemonium of the great Antichristian apostasy, and acknowledged as saints the enemies of the cross of Christ; but we have equally homologated her aspersions of men "of whom the world was not worthy."

What was the heresy of Nestorius? He protested against the use of that epithet of Mary, which is Rome's watchword, and the seed of her Mariolatry—*θεοτοκος*. It was not merely that he was stumbled at the old Pagan title of Cybele being applied to the mother of Christ; but he perceived its unscripturalness, and he foresaw the germinant creature-worship of which it was to be made the vehicle. Hence he was accused of separating the natures of Christ; though he separated them no more than we do now, who freely own Mary as "the mother of Him who is God," but who repudiate as unscriptural the name, "Mother of God." A tyrannical hierarchy condemned him; and we to this day join them in casting out his name as evil. He threatened to be a troublesome protestor, with both Scripture and antiquity on his side; and he had to be written down by the "powers that were," and proclaimed a heretic.

What had Apollinaris done to merit the evil reports the Church history has loaded him with? He was a man of genius and refinement evidently; one who loved poetry and wrote Christian hymns for the Church. He was a man too that loved and studied his Bible. But he had in some way offended the priesthood. Probably he was too independent for them. He was charged, as usual, with heresy. Taking even the representation of his enemies, his errors arose from jealous fear of encroachments upon the supreme Godhead of his Lord. His words were distorted by his enemies into heresy. Athanasius and Basil set about writing him down. This was soon accomplished; and the Christian poet of his day, the scholar of his age, the simple Christian man, was silenced. His works are not extant; and even his hymns have perished.

Do these statements seem extreme? Let the student inquire for himself. He will find that more of Church history requires to be re-written than he is aware of. If we are too anti-patristic, there are not wanting Churchmen who will, with all cordiality, set us right. We shall have done no great harm, if we have suggested the necessity for further excavations under the venerable mounds and towers of Babylon the Great. There may be gems buried there, the discovery of which will repay the most expensive and elaborate research.

Neander does a little in this way; and has not been quite so

tractable as other Protestant annalists, nor so afraid to move out of the beaten path of time-honoured ecclesiasticism. Would that he had ventured a little farther. We are sorry to find the Swiss historian of the Reformation so completely satisfied with his patristic trammels. He and Gasparin, and Bungener and Viguet, might have been expected to have hesitated a little before endorsing so many of Rome's panegyrics on Saints and Fathers.

Professor Blunt is too much of an apologist for the Fathers to suit our ideas of a true Church historian. Mr Owen is not so much an apologist for the Fathers as an expositor of their works. Higher, we suspect, in his Churchmanship than even Blunt, he has given us a readable, and in many respects a fair, candid, and temperate volume. It is somewhat of a *Cutena*, and gives us liberal extracts in every chapter. Probably he would "go through" with his principles, and reverence all that he finds in the old folios of the Church. In his chapters on Predestination, he seems frankly to accept the *Calvinism* of Augustine as part of patristic theology. Not so Professor Blunt. He cannot accept Calvinism even as Augustinianism; but dislikes and condemns it in any form. Was it in irony, or was it in the excess of his anti-Calvinistic zeal, that he parades Origen's Universalism as a proof that he was no Calvinist? Of course, the man who mutilated the doctrine of the Trinity, who held Purgatory, who accounted for the existence of evil by the pre-existence of souls, who denied eternal judgment, and maintained the salvation of men and devils, was no narrow-minded Calvinistic, no pinched exclusionist. But surely anti-Calvinistic Churchmen, whether low or high, cannot strengthen their cause by appeals to such defenders of the faith as the Egyptian Platonist! It is no discredit to Calvinism that it was attacked and undermined in early ages by the *Origenistic* philosophy.

God has spoken to us by His prophets and apostles; above all, by His Son. He has not so spoken to us by any since the apostles passed away. Assuredly He has not so spoken to us by the Fathers. The teaching of these last is not *divine* teaching, even though it were much more perfect than we have found it to be. Their vast volumes may embody much truth, much eloquence, much genius; but they bring us under no responsibility either to hear or to obey. Let the Fathers take their place in the shelves of human authorship, and be ranked according to the amount of truth which they may be found to contain. Let their dogmatic theology, in so far as it was harmonised or systematised, stand for what it is worth. Let their expositions of Scripture be duly consulted and studied; but let them not be set up as oracles, or judges, or tests. Let them not be taken as representatives of the Church of Christ.

ART. IX.—*Rifle Practice*. By Colonel JOHN JACOB, C.B., of the Bombay Artillery, Commandant of the Sind Irregular Horse, etc., on the frontier of Upper Sind. With Plates. Fourth Edition. London: Smith, Elder and Co.

"OVER earnest shooting," says Roger Ascham, who, at Cambridge, taught Greek in the days of King Henry VIII., "surely I will not over earnestly defend, for I ever thought shooting should be a waiter upon learning, not a mistress over learning.

"Yet this I marvel not a little at, that ye think a man with a bow on his back is more like Robin Hood's servant than Apollo's, seeing that Apollo himself, in *Alcestis* of Euripides, in a manner glorifieth, saying this verse—

'It is my wont always my bow with me to bear.'

Therefore, a learned man ought not too much to be ashamed to bear that sometimes which Apollo, god of learning, himself was not ashamed always to bear. And, because ye would have a man wait upon the Muses, and not at all meddle with shooting, I marvel that ye do not remember how that the nine Muses themselves, as soon as they were born, were put to nurse to a lady called Euphemia, which had a son named Erotus, with whom the nine Muses, for his excellent shooting, kept evermore company withal, and used daily to shoot together in the Mount Parnassus; and at last it chanced this Erotus to die, whose death the Muses lamented greatly, and fell all upon their knees before Jupiter, their father, and at their request, Erotus, for shooting with the Muses on earth, was made a sign, and called Sagittarius, in heaven. Therefore you see that if Apollo, and the Muses, either were examples indeed, or only fained of wise men to be examples of learning, honest shooting may well enough be companion with honest study."

So says honest Roger Ascham, who also praises shooting in the following terms:—

"Therefore, to look on all pastimes and exercises, wholesome for the body, pleasant for the mind, comely for every man to do, honest for all other to look on, profitable to be set by of every man, worthy to be rebuked of by no man, fit for all ages, persons, and places, *only shooting* shall appear wherein all these commodities may be found."

"My choice, says a bold soldier of the time of Charles I., "in the day of battel, and leading a storm, or entering a breach, with a light brest-plate and a good head-piece, being seconded by good fellows, I would choose a good *halfe-pike* to enter with."

"Man," says Colonel John Jacob, C.B., "has been called a tool making animal; and, it is certain, that the perfection of tools and machinery is a clear and certain mark of advancing civilisation, of the progress of the rule of mind over matter, of the development and operation of these laws by which the working of the human brain makes the force of one civilised man equal that of the stalwart limbs of thousands, or even millions, of untaught and ignorant barbarians.

"If such be the value of the tools employed in the arts of peace, those used in war must be even of greater importance. On success in war often depends the power to follow peaceful pursuits; on the high state of the art of war, the practice of all other arts may depend."

"Whatever state," says the clear-headed Robins, writing a hundred and ten years since, "shall thoroughly comprehend the nature and advantages of rifle pieces, and having facilitated and completed their construction, shall introduce into their armies their general use, with a dexterity in the management of them, will by this means acquire a superiority which will almost equal anything that has been done at any time by the particular excellence of any one kind of arms, and will, perhaps, fall but little short of the wonderful effects which histories relate to have been formerly produced by the first inventors of firearms."

"The nation," says a writer of the present day, "that takes thoroughly to the rifle is impregnable."

To national impregnability, which means national independence, there are three military requisites: the first, the weapon that shoots far; the second, the half pike, or short spear, for the close thrust; the third, the union of these two into a single weapon. That weapon is the *rifle*. The rifle, with its bayonet, which no man can handle like the British man, is, in fact, the symbol of the national union which made a United Kingdom out of two independent monarchies. The bow was the national weapon of England, the spear the national weapon of Scotland. The two combined in the bayoneted fire-arm; and the bayoneted fire-arm is now the rifle, which, without a shadow of doubt, is the most powerful and most practical weapon ever placed in the hands of a soldier.

On the present occasion, therefore, we propose to offer a few cursory observations on rifles, neither scientific nor historical—though both might be interesting in their way—but actual. We shall inquire neither into expansions nor contractions, angles nor curves, parabolic hypothesis, nor alarming mathematical symbols, which hitherto have not shed much greater light on the practice of rifle-shooting than they did on the cognate problem of ship-building. Nor shall we ask when the long-bow,

which, with its cloth-yard shaft, has such a marvellous history of battles fought and won, first came into use in England; whether it be of the East, and came with the Norman, who—we have a theory—was of Eastern origin; nor how it fell into the hands of the English Saxon; nor how the English bowman, who was known, as some say, at the distance of a mile, by the size of his great right arm, was the Saxon Englishman, and won the battles of England, while the Norman still sat on horse-back and handled sword and spear. Nor shall we ask how bow and spear were ever struggling for the mastery, till they came into a union, even though Colonel Jacob revives the memory, and tells us that, “as with those bowmen at Homildon Hill and Flodden, even men naturally equal to ours would be absolutely powerless before skilful English soldiers so armed (with the rifle), and trained both to independent and combined action.” Nor need we point out to the gallant Colonel that he should have taken Falkirk rather than Flodden, for it was there that the Chiltrons, with their eighteen feet long spears, were shot down where they stood by the English arrows; or how, at a later battle, not far from Stirling, all the chivalry of England surged uselessly against the spears, and the archers being by “Schyr Robert of Keyth stekand dispitously,” and “scalyt ever ilk ane,” the spear of defence routed, for the time, the bow of attack, and founded a long historic story, that finished at last “like the end of an old song.” Into science or lore we enter not save cursorily—we wish to know what the rifle is in the present day, and what it can do. Colonel Jacob shall tell us.

To enable the uninitiated reader to understand the advance made by the rifle, in its recent form, over the old smooth bored musket, which was the ordinary weapon of our infantry down to the year 1852; and over the rifle, which was practically used in the service down to the same period, we may state broadly, that the fire of the musket was not usually considered of avail beyond the distance of 250 yards—or say, at the outside, 300 yards. Of course, the range or distance to which the ball could be driven was much greater, but the weapon failed in accuracy; no one could tell where the bullets would go to. Nor were the rifles very much better—as they were used. The two-grooved rifle in the service in 1852, called the Brunswick rifle, shot so inaccurately at 500 yards, that no angle of elevation could be assigned for that distance. The great fault in that case was in the shape of the bullet. With a properly shaped bullet, the same piece would certainly have ranged upwards of 1000 yards, with considerable accuracy. We must note, however, that the Brunswick rifle was far inferior in its design to the old poly-grooved piece, constructed for an ordinary spherical ball, and answering their

purpose remarkably well at the limited range that the spherical ball can attain. We need not pretend to determine the exact date of the recent improvements, because various claimants have asserted their priority; but it is tolerably certain, that down to a very recent period, 200 yards was esteemed the distance at which even an approach to accuracy could be obtained. Let us then contrast that statement with the following:—

“At a distance of 700 yards, on a windy day, an experiment, requiring forty-eight rounds to be fired from different barrels, set at different angles, was made, without a single shot missing the target.”

This statement is from Colonel Gordon's account of the experiments made at Enfield in 1852, but it sinks into comparative insignificance when brought into the proximity of Colonel Jacob's doings in India.

“The 24-guage balls, of the increased length of two and a half and three diameters, proved admirably effective at ranges up to 2000 yards, which had never before been attained.”—(*Rifle Practice*, p. 26.)

“A 32-guage ball, of three diameters in length, with thin iron point, is perfectly effective up to ranges of 2500 yards or more.”—(P. 28.)

“Regular practice at a further range than 2000 yards, I have not tried; but from what I have seen of the effect at that distance, I am convinced that, with these balls which I am now using, a moderately light and perfectly handy rifle may be made to possess as much effectual power, at a distance of 3000 yards, as the old two-grooved rifle with the round ball, at 300.”

It was in the year 1852 that the conclusive experiments carried on at Enfield, induced, or, it may almost be said, necessitated the introduction into the army of the government rifle, termed officially, the *new Enfield musket*. Previous to that time, the *Minié* bullet had been tried, with a certain amount of success. Its principle was to make the bullet expand by means of an iron cup, which was intended to be forced into the lead by the explosion of the powder. The object to be gained was to enable the soldier to load easily—the difficulty of forcing down the ball having been the practical objection to the rifle as previously employed. The iron cup, however, instead of being driven into the lead, was frequently driven through it—the iron cup was discharged, and the lead remained in the form of a ring in the barrel, rendering the piece more or less unserviceable. The principle was correct, but the mode of application was unsuccessful, and the iron cup disappeared from the service. The *Minié* rifle was the pattern of 1851, and the diameter of its ball, in decimals of an inch, was .702. The *Enfield* rifle, which

followed the Minié, originated in the experiments made at Enfield, where the government factory is situated. Some of the most eminent English gunmakers had been invited to send in such patterns of rifles as in their estimation would be found suitable for the military service of the country. The invitation on the part of the authorities appears to have been given in good faith, and with a candid desire, not only to discover the most serviceable weapon, but to do impartial justice to all parties forwarding their guns for trial or competition. The invitation, it must be confessed, was not met by the gunmaking community with the same spirit of candour. There were reservations, alterations, and a fear that their weaknesses might be discovered; some were too late, some appeared to have sent the wrong pieces or the wrong bullets, and, on the whole, the exhibition was not particularly creditable to the trade. Mr Wilkinson formed the exception. He sent in his articles, stood to his patterns, and, singularly enough, the recent tendency seems rather to approach the conclusions in which Mr Wilkinson differed from his fellow competitors. The gunmakers who forwarded rifles were, in addition to Mr Lovell, inspector of small arms—Mr Lancaster, Mr Purdey, Mr Westley Richards, Mr Wilkinson, and Mr Greener.

The regulation Minié was also brought into competition, and the Brunswick two-groove.

The specification of the guns was as follows, beginning with the largest bore :—

Guns.	Bore in decimals of an inch.	Spherical balls to 1 lb.	Number of grooves.	1 turn in feet.
Brunswick, or two groove,	704			2 f. 6 in.
Regn. Minié,	702		4	6 f. 6 in.
Purdey,	650	17	4	grad. 6 to 4.9
Lovell,	635	18	4	6 f. 6 in.
Greener,	621	19		
Richards,	577	24		
Lancaster,	540	30	ellipse	graduated.
Wilkinson, ..	530	31	5	6 f. 6 in.

Many experiments were made with these muskets; and the mode of ascertaining their respective merits, was by firing at various distances a certain number of shots from each barrel when fixed in a frame, and set to an angle of elevation, and then firing twenty shots from the same barrel, when mounted in its stock, from the shoulder of a good marksman, who fired with a rest. Every care was taken with the mechanical adjustments to make the experiments as accurate as possible; and the experiments were

on the whole highly satisfactory, with one exception. There appears to have been no intelligent apprehension that the shape of the bullet might be the most important element of the whole investigation. No principle appears to have presided over this part of the inquiry. There was evidently no conception, either on the part of the gun-makers, or on the part of the officers, that the form of the projectile to be driven through the air was of incomparably more importance than the number of grooves by which the rotatory motion might happen to be communicated, or the greater or less calibre which might happen to be selected. The number of grooves, provided the rifle bullet be made to spin properly, is a matter of comparative indifference. It may be two, or it may be twenty, and the gun may shoot well in either case. And the size of the bore is a mere matter of convenience; the smallest bore being selected that is found fully efficient for ordinary military service. But the shape of the bullet is the one radical and essential consideration which surpasses all the others. It is the bullet that has to move through the air, the rifle being merely the implement for communicating the motion; and one of the most remarkable facts in the whole history of arms, is this very fact, that the shape of the bullet should have been neglected down to our own day. Even at Enfield, in 1852, there scarcely seems to have been even a gleam of suspicion that the form of the projectile must be suitable to the velocity with which it was to move, and the medium through which it was to be propelled. The very slow growth of an intelligent understanding of this point will ever remain a marvel in the history of the scientific art of gunnery. Neither officers, nor gun-makers, mathematicians, nor artillerymen, the sound practical men who trust unlimitedly to their own judgment, nor the theorists, who have an equal reliance on the infallibility of abstract truth—neither the one nor the other appear to have had the smallest real insight into the consideration which, next to that of making the rifle bullet *spin*, is virtually the crucial point of the whole matter. We shall endeavour to explain this, after describing the Enfield rifle.

After the experiments had been concluded—and out of the materials which had been furnished in the course of the experiments—two rifled muskets were made at the Royal manufactory at Enfield. The whole question of designing a pattern arm being a question of the compensation of advantages, and the adjustment of proportions and degrees, the authorities in the construction of the new muskets, endeavoured to assemble the most useful and most serviceable qualities according to the results that had been brought out in the course of the trials. They produced two muskets, not exactly similar to any that had been offered for trial, but combining, to the best of their judgment,

the merits that had been made apparent. These muskets, up to 800 yards, shot better than any that had been tried. These were the new Enfield rifles, and their specification was as follows:—

Weight, with bayonet,	9 lbs. 3 oz.
Barrel, weight,	4 lbs. 2 oz.
„ length,	3 ft. 3 in.
Bore, cylindrical,577 in.
Grooves, three—one turn in,	6 ft. 6 in.
Charge—Powder, $2\frac{1}{4}$ drachms.	
Bullet, length,960 in.
„ diameter,568
„ weight, grains,	520

The bullet was made with a cavity at the butt to make it expand, but without an iron cup; and for this bullet, the inventor, or presumed inventor, Mr Pritchett, received, if we mistake not, a gratuity of L.1000 from Government. Since then, however, a modification has taken place. It has been found that the capped bullets, when made small enough to load with sufficient ease for military purposes, do not expand with certainty; and, consequently, do not take hold of the rifling, in which case they are projected out of the barrel without the spinning motion, and tumble “head over heels.” Instead of going straight forward—or as straight as the continued action of gravity would allow—they perform extraordinary curvatures in the air, and are not particularly safe when they go astray. To remedy this defect, a plug of hard wood has been introduced into the cavity, and it seems to answer its purpose tolerably well. Such is the rifle now employed in the service, called the Enfield Rifle, or pattern of 1853; and of this pattern, 272,000 were supplied by the private gun trade of the country, down to March 1857.

For the manufacture of this gun by machinery, so as to make the various parts of the gun interchange and fit each other universally, the Enfield Factory has received a number of ingenious machines from America; but no machine-made gun had been produced till after the Crimean War; and the Birmingham makers are of opinion, that it is not bedded together with the same solidity as the Birmingham made gun, and that it will not stand the same length of wear. From the inspection both of the machines and of the work produced by them, we should imagine that there cannot be the slightest doubt as to the ultimate success of the Enfield system; and the best evidence of the prospective triumph of machinery, is the fact that private makers—the London Armoury Company for instance—have already supplied themselves with similar machines from America, for the purpose of executing their contract with Government, for the supply of 30,000 rifles of the Enfield pattern.

The Enfield Rifle, then, represents a long thin tube, with a slow pitch of rifling, and a bullet consisting of a cupped cylinder with a rounded end. It performs well up to 800 yards, and as a half pike, there can be no doubt of its unquestionable excellence. The steel bayonets, as now manufactured, have not only never had an equal, but have never had anything in the shape of a rival that could approach them. They appear to be as nearly perfect, both in quality and finish, as anything of the kind can possibly be. As a whole, we need not hesitate to repeat, that no such weapon was ever before placed in the hand of the soldier.

But Colonel Jacob can beat the Enfield rifle in shooting; and it will become a question whether some new modification will not be requisite in the national arm. If the Enfield rifle can only perform well, as to accuracy, up to 800 yards; and if Colonel Jacob has "prepared a pattern-rifle for the army far more handy and convenient in every way, than the rifles hitherto in use of 32-gauge bore, only with which a tolerably good shot *can certainly strike an object the size of a man, once out of three times, at a thousand yards distance*, and of which the full effective range is above 2000 yards—the ball at that range still flying with deadly velocity," it stands to reason, that our troops would have as poor a chance with a foreign enemy, armed with the Jacob rifle, as our cruisers, armed with carronades had with the American ships, armed with the long 32's. Troops armed with the old musket, would be immolated in the presence of the Enfield rifle; but if the Enfield rifle can be itself surpassed almost as much as it surpassed the musket, it would be satisfactory to know that Great Britain was the first to take advantage of the discovery.

Before adverting to the performances of Colonel Jacob, we may state concisely what we conceive to be the essence of the whole of the modern improvements in the rifle.

To project a round or spherical ball through the air is very much the same as to sail a washing tub through the water. The problem of constructing a bullet is, in fact, very similar to that of constructing a ship or a boat. For the smooth bored gun the round bullet was naturally adopted, both on account of its convenience in loading, and because it has not been found that other forms can be projected from the smooth bored gun with greater advantage than the sphere. We do not affirm that a form of projectile may not yet be discovered, that shall shoot better than the ordinary round ball "or sphere" from a smooth barrel. We merely on this occasion advert to the fact, that the round bullet was used universally with the smooth bore, and naturally enough was used also with the rifles. But to project a sphere through the air is much the same as to sail a round tub through the water. Improvement in rifle practice, there-

fore, must depend in suiting the form of the bullet to the requirements of its intended flight; and the problem is much the same as that of building a clipper ship, supposing that we were to start from the washing tub. The Pritchett bullet or Enfield bullet represents a trough with a rounded end, and of course a trough with a rounded end is superior to a tub. The flight of the Enfield bullet depends upon its form, and not upon any principle of expansion produced by a cup, to be acted upon by an iron capsule, or by the force of the powder alone, or by a plug of boxwood. And this assertion can be proven in this way—let a bullet of the same shape be cast with flanges, so as to lay hold of the rifling, and it will still fly as well as before, provided its fittings be air tight. But it is quite evident that a trough with a rounded end is not the best form for making its way either through the water or the air. The shipbuilder, looking at the elegant curves of his own beautiful water line, would stand aghast at the section of even the Enfield bullet, and would reckon it as no great advance upon the washing tub. Colonel Jacob comes in with a modification in the right direction, and puts a sharp bow on the ball, which he makes two diameters or two and a half diameters long, but leaving the butt or stern of the ball flat, and this flat tendency appears to be the prevailing fashion of the present time, apparently on the supposition that the powder hits a flat ended ball harder than one that should be finished with a graceful curve like the *run* of a ship. But Colonel Jacob's bullet that has a bow is an approach to the truth, and of course it flies both further and more accurately than the round ended trough. The next improvement is to put a proper stern on the bullet, so as to deliver the air round a proper and becoming curve instead of at a sharp edge; and then the bullet, with a little modification of its whole curvature, will be as nearly perfect for flight through the air as a clipper ship is for passage through the water. The advantage of the flat end or square stern is, we apprehend, purely chimerical; because the powder strikes the bullet like a punch, and a punch fitting a cone will strike the point of the cone as hard as a flat punch would strike the base of the same cone. Progress is the law of the rifle bullet, and sooner or later it will come to the elegant curves of the ship, otherwise it will not fly so far as it might do. The designer of a rifle ball might study with advantage the process of draughting a ship's lines.

The modern improvements in the rifle then, resolve themselves into the improvement in the shape of the bullet, by which it is adapted for flight through the air, and into the use of a bullet that can be easily loaded, but which expands under the action of the powder either—first, by the use of a cupped butt; or, second,

by the use of one or more rings, which enable the after part of the bullet to jam up and lay hold of the rifling. With a long bullet we have little doubt that the lead will jam up even without rings, if the bullet be made sufficiently near the size of the bore to fit properly with a greased patch. The lead is easily compressible, and a much smaller amount of hold than is usually supposed enables it to take the rifling. The phenomena called *stripping* is, we apprehend, one which most riflemen may have heard of, but none can say that they have observed. It is a myth.

Colonel Jacob's improvement, then, consist, in the first place, in giving a better form to the bullet, by which the resistance is diminished and the range increased. To fire this bullet he uses a shorter, heavier barrel, with a more rapid twist and a smaller bore; and in these particulars we entirely concur with him. Even during the Enfield experiments it was found that a barrel thirty inches long afforded the best shooting that was then obtained, but the extra length was considered requisite for a military weapon,—for the half-pike service.

But the improvement in the form of the bullet is not Colonel Jacob's only claim to be ranked as the first experimental rifleman of the day. He has constructed and applied to the rifle bullet, a small shell, consisting of a copper tube filled with gunpowder, and primed with detonating powder. The shells are made of various sizes, and are now supplied by the gun trade. The bullet is cast upon a cone, which leaves a cavity into which the shell can be placed without difficulty. The point of the shell is of course in front, and the moment the bullet strikes, the shell explodes, and does damage proportioned to its size and the nature of the surrounding materials. These shells, for military purposes, appear to be the most formidable adjuncts that have yet been applied to the rifle; and it may safely be presumed, that they would render the fire of a body of men wonderfully effective where the ammunition waggons of an enemy could be approached. We shall state what Colonel Jacob has been able to do with them. At Kurrachee, on the 23d August 1856, an ammunition waggon was constructed out of an old country cart, with a box on it, about the size of a pair of the ordinary ammunition boxes in use with a field battery. The box was four feet long and two feet high on the side next the riflemen, which was one inch and a half thick; the lid and the other sides being an inch thick. The box was filled with damaged gunpowder, in cotton bags, each containing 2 lbs.—the whole charge being about 100 lbs. The box was properly secured, and a tarpaulin nailed over it. The cart was placed at the foot of the shooting butt, 1200 yards from the shooters, who, on this occasion, were Mr Gibb, C. S., Captain Gibbard of the Artillery, Colonel Jacob,

and Captain Scott of the Lancers. The morning was cloudy, and the cart not very distinctly visible. About twenty shells in all had been fired without exploding the powder, when the ninth shell from Mr Gibb's rifle (32 gauge only) "struck the box and exploded the powder, with the most brilliant effect." Some of the officers, however, still entertained the opinion that the manner in which the shot and cartridges are packed in the artillery ammunition waggons would prevent the possibility of the rifle shells reaching the powder, even if they burst among the shot in the boxes. To test this opinion another waggon was prepared, with four boxes on it, similar to those of an ammunition waggon in a field battery. These boxes were packed with round shot, cartridges, etc., like those of a regular field battery, and the proceedings were resumed on the 25th August, at the same distance of 1200 yards. The seventh shell from Captain Gibbard's rifle exploded one of the four ammunition boxes. The fifth shell from Colonel Jacob's rifle entered another box, and a second explosion took place. The gentlemen present proceeded to the butt to examine the effect, and found the waggon burning, although two of the boxes were still unexploded. The neighbourhood being dangerous the spectators retired, and the third box exploded. The fourth was blown up by another shell, and the waggon was totally destroyed.

'But Colonel Jacob's practice was not limited even to the range of 1200 yards, as will be seen by the following memorandum, which we quote entire, believing it to be the record of the most notable feat ever performed with so small a weapon as a shoulder rifle :—

“ RIFLE PRACTICE AT KURRACHEE. .

“ *Friday, 5th Sept. 1856.*

“ A powder box was prepared for explosion, by rifle shells, at a range of (1800) one thousand eight hundred yards. The box consisted of two boards, one and a quarter inches thick, and ten feet square, put together with a space of one inch between their surfaces; this space was filled with gunpowder, and was found to contain a charge of above 500 lbs. The box was placed against the butt on the ground, and after being loaded was well tarred over. At 7 A.M. on the 5th September 1856, rifle practice was commenced with shells at this box, from a distance of 1800 yards. The morning at first was dark and cloudy, but after a few shots had been fired the weather improved, and soon became favourable as regards light, although a fresh breeze was blowing across the range from right to left. The shooters were :—

Captain Gibbard, Artillery	.	24-gauge Rifle
Captain Thatcher	.	16-gauge Manton
Colonel Jacob	.	24-gauge Manton
Captain Scott, A.D.C.	.	32-gauge Manton

The undermentioned gentlemen were also present :—

Colonel Trevelyan, Artillery ; Lieutenant De Nitre, Artillery ; Captain Pirie, Lieutenant of Police.

For the first few rounds the shells struck near the foot of the butt, but as the morning brightened the practice improved, and many shells in succession struck close over and around the box—so close, indeed, that to the naked eye they appeared actually to strike it. The practice was steadily and deliberately continued, but the powder still remained untouched, till Colonel Jacob's little double rifle had been fired twenty times. The last four shots from this rifle were all very near to the box ; and when fired for the twenty-first time, the shell from the second barrel struck the box and exploded the powder. The effect was magnificent, the distance being so great, and the charge in the box so heavy. So violent was the explosion, that it was thought at first that the butt wall had been blown down ; but when the smoke cleared, the wall was seen standing uninjured. This wall is built of stone, ten feet thick at the base, and one and a half at top, is one hundred feet long and fifty feet high. A large portion of surface near the powder-box was a good deal shattered, but the damage was only superficial, and the butt was not seriously injured. Throughout the practice at Kurrachee no rest of any kind was used. The rifles were always fired from the shoulder, the shooter standing up."

With regard to the penetration of the bullets used by Colonel Jacob, we may take the following instances :—At Kurrachee, on the 26th September 1856, a 24-gauge iron-pointed ball, fired with a charge of $2\frac{1}{2}$ drachms of powder, at a distance of twenty-five yards, penetrated clean through eighteen deal planks, each three-quarters of an inch thick, and smashed itself all to pieces against stones on the other side. And, on the 29th September 1856, "a 24-gauge iron-pointed bullet, with a charge of $2\frac{1}{2}$ drachms of powder was fired at twenty-five deal boards, each a little more than three-quarters of an inch thick—the whole thickness of all the boards being twenty inches. The boards were packed close one behind the other, and wedged fast into a box. The rifle was fired at twenty-five yards distance. The bullet penetrated clean through the whole twenty-five planks, and buried itself its whole length in a block of hard wood, two and a half inches thick, which was behind the mass of boards, breaking this block into two pieces.

Colonel Jacob objects to a long thin barrel for a rifle, which he

admits, however, may perform well up to 800 yards, with an expanding ball and a slow burning powder. He prefers a short barrel with a rapid twist. In this there is nothing new. The German rifles that have been in use for the last hundred years would nearly fulfil the conditions laid down; and plenty of rifles were made in England before the name of Minié was heard of, quite near enough to Colonel Jacob's specification to perform well if fitted with the appropriate bullet. The mystery is not in the rifling, but in the shape of the projectile. "For my projectiles, therefore," says Colonel Jacob, "we require a short barrel with deep grooves and great twist. If we attempt to use these projectiles with a long thin barrel, like the Enfield, they must fail signally. The weight of the ball, and its solid resistance, are too great for the weaker barrel, which trembles, shakes, and vibrates when fired to a degree which shows it to be altogether overstrained; in fact, the iron of the barrel must be distorted into a series of waves, as the ball passes along it, and the elastic action of so thin a tube near the muzzle end, must make it jerk the ball about in a wonderful manner as it leaves it." Colonel Jacob has here adverted to an important principle, which may account for the unexplained fact, that while shot barrels are almost invariably made round, rifle barrels have almost as invariably been made eight-sided; the angles on the barrel being calculated to arrest the undulation. The same circumstance may also give a clue to the fact, that the *double rifle* was found preferable to the single. The single barrel must be made stout, so as to control the expansion and vibration; but the double barrel effects this by means of joining two tubes together. The waves cannot be generated to the same extent, when one side of the barrel that is undergoing expansion under the force of the powder is held firm by another piece of metal which is not undergoing a similar expansion. It is quite in accordance with sound theory, therefore, that the double gun may actually be found to perform better than a single—taking the weight into due consideration. With regard to size, Colonel Jacob considers a 32-gauge to be large enough for anything, and twenty-four inches to be long enough for the barrel of any calibre whatever. The grooves, he says, should be full, deep, of breadth equal to that of the lands, and may turn once in three feet of length. Such are Colonel Jacob's conclusions, based upon experience, second to that of no living man; and though we should be leave to differ from the general affirmation, that 24 inches would be found long enough for *any* barrel, we willingly admit that Colonel Jacob's view is substantially the correct one.

In conclusion, we shall not presume to recommend the perusal of this extraordinary pamphlet, inasmuch as no one who has not

perused it, or who has not conducted a somewhat similar course of experiments, can be said to have any just conception of the real capabilities of the rifle. Nor shall we congratulate Colonel Jacob on having brought to such successful issue, what we venture to characterise as the most important set of experiments ever made with fire-arms by a single individual. Colonel Jacob has gone far to alter the very nature of the art of war. His shell—almost an ingenious curiosity when first inspected—contains within it a power which, hereafter, in the field or on the waves, will, we fully anticipate, make the name of the inventor memorable. This fact cannot be overturned—the Jacob shell, at the distance of a mile, can from an ordinary shoulder rifle blow up an ammunition waggon. That single fact contains the elements of prodigious advance. But whatever the effect in the field—on cavalry by day, or even more important still, by night, when the horses could be stampeded—on ammunition waggons—on batteries—on invested fortresses, or towns—it is at sea that we expect the powers of the Jacob shell to produce the most important results. One of these shells passing into a powder-bucket might determine the fate of a line-of-battle-ship; and what is more, sea-ports and dock-yards that could not be approached with heavy siege artillery, might possibly be approached by these tiny shells, every one of which contains within itself the capability of exploding a magazine or setting fire to an arsenal. The experiments of Mr Whitworth, though not without a certain value, sink into insignificance before the long series of successes which have attended the intelligent and persevering efforts of Colonel Jacob of the Bombay Artillery, now, we are happy to observe, Brigadier-General Jacob, C.B.

ART. X.—*The Angel in the House.* By COVENTRY PATMORE.
Books I. and II. Second Edition. J. W. Parker. 1858.
Tamerton Church Tower, and other Poems. By COVENTRY
PATMORE. J. W. Parker. 1854.

ALL the poetry most characteristic of the present century has in it a kind of microscopic air. It concentrates the eye on what is near, rather than on what is distant; it bids us see a new world in every fresh point of space, instead of making us feel that every point is a fresh position from which to sweep with new result the broad horizon of the universe. And, as the magnifying glass is necessarily of a short focus, and throws into dimness and mist all that lies beyond its proper range, and that, too, by the very same property by which it reveals in full the marvellous complexity of the smallest point within that range, so it seems that it is the condition of the poetic faculty of modern times, to give us extraordinary insight into what is near and apparently insignificant, at the expense of those flowing outlines and comprehensive groupings of human life which the poets of older days painted for us. The mind, like the eye, may be adapted to a near or a distant range of observation; but, once adapted, it is not easy to alter it; and so, too, the mind that has been engaged in observing *itself*, cannot be easily accustomed to include a wide field of view. And there is an obvious reason for this, beyond the mere illustrative analogy we have hitherto used in explaining our meaning; for, though every poet, whether of microscopic or telescopic vision, must necessarily have experience in order to sing, and can only use his own experience in his song, that experience is very different in kind, and is used after a very different fashion by the great painters of life and human story, such as Homer, Chaucer, Tasso, and Milton, to that in which personal experience is used by the great modern school of poets—Goethe and Coleridge, Wordsworth and Tennyson. The former do not, like the latter, gaze into their own experience *first*, and then slowly interpret by it the signs and symptoms of external life. Their imagination is quickened from without, not from within. They do not see (simply because they never study) all those minute ripples of thought and feeling which bear no visible trace upon the broad field of human life and history. They see the deeper breadths of shadow and of light; they see the masses of colour which distinguish the various groups of men, and the striking aspects of nature; but the smaller elements of which these are composed they know only roughly, and from

an instinctive knowledge of proportion. Just as a quick ear will catch a tune though it could never distinguish the separate notes, they see and know the whole before they know the parts. The great epic poets could not have painted for us what they have painted at all, had not the rhythm of some great passage of human life caught their imagination *before* they had gained any insight into the detailed elements of which it was composed ; and, of course, they sing with less of inward detail and more of broad effect than the modern poets, because the *unit* of conception with them is far larger than it can be with the self-conscious singers of our own times. If you gaze on the external world without the preparation of self-study, you cannot possibly see all that you see if you have first studied the deep details of your inward life ; but you will partially understand and grasp a much wider if a much less complex world. A mind that comes, like Goethe's, to its study of society with an imagination already burdened with the richest abundance of inward experience, will see more than it can delineate with any artistic effect in its pictures. A self-conscious imagination is a microscope that enlarges indefinitely the details of every atom it beholds, and so leads to a pre-Raphaelite kind of poetry, which distracts attention from the grouping and the outline by the unnatural distinctness of every turn of feeling and every shade of thought. The consequence is, that poetry is taking more and more minute fields of delineation every day. A single daisy, a group of daffodils, or at most a mountain, a child, or a woman, is almost as much as Wordsworth can endure to deal with as the subject of any one of his finest poems. Goethe is greatest in delineating a few female characters ; and Tennyson most perfect in his mood of sadness, as it expresses itself in half-despondent self-questionings, or in melancholy song. Since Scott ceased to write, we have had no poet whose imagination was kindled by the outward world, by groups of noble figures, and the drama of event. All our recent poets bring to their work the microscope of self-conscious experience ; and so, unless they wisely limit themselves to comparatively minute themes, they are compelled either to execute some parts with disproportionate accuracy, or to crowd their canvas with distracting detail. Goethe's tales are frequently failures, simply because he kept but one figure under his object-glass at a time, instead of the whole action of the tale.

But though the modern poetry is minute and microscopic, it is anything but close and confined. The single point it selects for its magnifying glass, is not only shown to be a thousand-fold fuller of action and feeling than it was known to be before, but is connected on every side with the world around it, and the infinite life beyond. Even Wordsworth's daisy or his daffodils

are instantly seen, not merely to be springing from the common earth, but to be over-arched by the eternal heavens;—they teach human lessons “of all degrees,” and the spiritual microscope is never lifted away till they have yielded fresh symbols of the immortality of man, and fresh tokens of the tender mercy of God. The infinitude of life is perhaps felt more deeply in the poems of the modern self-conscious school than in any other. They have not generally the sunny warmth and glow of stories which paint for us the whole “wonder and bloom of the world;” they have almost always something of the awe of a world of mysterious shadow in them; for, while they take a very narrow foreground, they always show you the infinite distances into which that foreground stretches away on every side. And it is clear that indications of this mysterious infinitude can be given more easily and adequately in a poem on a small theme, than in a poem on a large theme. A solitary flower may be made the means of expressing the infinite awe of the universe far more effectively than the most crowded drama. The fuller a picture or a poem is of positive life action and feeling, the less room is there left in our finite minds for the strange, unconceived immensity beyond. Rembrandt fills us with deeper sense of the supernatural world by his rough sketch of Jacob’s sleeping form, and the dark ladder lit up by one or two flitting shapes of light, than does all the crowded field of Michael Angelo’s last judgment. And thus the modern school of minutely penetrating, self-conscious experience, unveils the spiritual world far more effectually—though, of course, only at single points—than the great epic and dramatic poets. Tennyson brings us oftener and far more closely and personally face to face with God, and sin, and immortal life, than Milton—though God and sin are the professed subjects of Milton’s grand poem, and only the occasional visions of Tennyson’s poetic world.

Mr Coventry Patmore certainly belongs to the modern school of poetry—the self-conscious or microscopic school, as we have termed it; but in many respects he differs remarkably from the other members of it. The single topic on which he may happen at any time to dwell, is magnified in the same careful way, and enlarged in all its details, by the interpreting light of a self-contemplating experience. We see many emotions, and learn to distinguish many shades of emotion which we had never noted before; and the emotion is not merely delineated—it also throws off prismatic fringes of thought, as happens so commonly in the finer poems of Tennyson. But yet Mr Patmore has a manner, and merits, and deficiencies of his own, which distinguish him strongly from his contemporaries. It is obvious at once that his favourite study is what we may call the *surface*

of man's deeper life,—that stratum of human existence where character passes into *manners*. He seldom or never probes the depths of the individual soul. He has no bias to investigate the *springs* of thought and faith. These he accepts; and he only begins to watch them keenly where they begin to blend with the influences which man exerts over man. He skims, as it were, the fine superficies of nature and humanity, but seldom cares to penetrate to those deeper and sterner social laws on which are based the fair "traditions of civility," which he sings with so much grace. He has himself told us, in some of his finest lines, that sustained spiritual effort is not a theme on which his genius loves to dwell—

"And to converse direct with Heaven,
Is a great labour in the breast;"

nor does he choose even to "converse direct" with man. What Mr Carlyle calls a "clothes-philosophy" is nearest to Mr Patmore's characteristic domain,—meaning, of course, by clothes, that spiritual vesture of the mind in which it appears—in all "seasons of calm weather" at least—to the eyes of spectators. He does not love to look through and beneath this to what the spirit is in itself—to the unclothed spirit as it is seen by God, or even as it is seen by men in the lightening gleams of tempestuous trial, and in moments when love or faith temporarily dissolves the close-fitting shell of social forms. Though Mr Patmore's special theme is love, it is not love in its deeper moods, but in its gentler courtesies;—it is "love ceremonious," love "the nursling of civility," not love in the mood in which it melts the "binding crust of years," and reveals the hidden depths of personal life to the gaze of another. The following graceful lines are not by any means specimens of Mr Patmore's best poetry, but they exemplify exactly the sphere he chooses for himself in his poem on love:—

"Let love make home a gracious court;
There let the world's rude hasty ways
Be fashioned to a loftier port,
And learn to bow and stand at gaze;
And let the sweet respective sphere
Of personal worship there obtain
Circumference for moving clear,
None treading on another's train.
This makes that pleasures do not cloy,
And dignifies our mortal strife
With calmness and considerate joy,
Befitting our immortal life."

Not only the spasmodic school, but almost all the modern poets—no doubt herein exaggerating greatly the passionate and

absorbing side of love—would call Mr Patmore's poem no poem on love at all. They would find no poetry in a love that "learned to bow and stand at gaze;" they would have no idea that love ought to recognise the "sweet respective sphere of personal worship;" and though we completely appreciate both Mr Patmore's meaning and the grace of his delineation, we draw attention to this contrast, simply in order to point out that he advisedly chooses, for the circle of thought and emotion in which he moves, one much more distant from the personal centre of human life than modern poets usually do. Indeed, this is not only his habit, but his professed desire. He does not write to unveil life,—he writes to exercise "the poet's gift of *perfect speech*" on that which is within most men's ken.

"Nor voice, nor art, nor plot, nor plan,
Nor aught of mine here's worth a toy;
Quit praise and blame, and, if you can,
Do, brother, for the nonce enjoy.
Moving but as the feelings move,
I run, or loiter with delight,
Or stop to mark where gentle Love
Persuades the soul from height to height."

And though he disowns expressly any wish to devote his song to mere temporary and transient beauty,—though he says,

"My faith is fast,
That all the loveliness I sing •
Is made to bear the mortal blast,
And blossom in a better spring;"²

yet in this, too, he is quite consistent with himself, for even spiritual and immortal attributes have not only their unfathomable depths, but their shining surface,—not only their hidden subterranean spring, but their visible undulating course,—not only their pools of mystery, but their sunny social courses; and the poet may choose the latter, and yet keep as truly to an "immortal" theme,—as if, like Wordsworth, he gave us glimpses of the well-springs of the creative beauty, or, like Tennyson, he probed awfully, and yet reverently, the secret roots of human faith.

This upper stratum, then, of human life, when character assumes the vesture of what we call *manners*, is Mr Patmore's peculiar sphere as a poet; and it has, of course, both its advantageous and its defective side. On the one hand, it gives more play, more widely-spreading colour to his theme, than, as one of the microscopic school, he could otherwise, if he pierced deeper, hope to attain; on the other hand, it opens out fewer of those vistas of infinite depth and wonder which an insight into the deeper springs of thought and love always command. His

theme is less circumscribed than it otherwise would be, but it has fewer glimpses of the central and primal life. Interpreting life as he does by his own self-conscious experience, it would follow, that if he took a more searching phase of that experience for what we have called his "unit of conception," he could not have had so extended a field. As it is, the thread of his poem winds through many light and gay scenes which would have marred the unity of any deeper theme. At the same time, of course, to go back to an old analogy, the magnifying-glass that admits a larger object at one view must have a longer focal-length and a weaker power. In other words, the self-conscious thought which plays over the whole upper surface of a man's spiritual life, instead of piercing into its deepest roots and springs, will miss many openings into that eternal truth of life which a more concentrated power would have detected and explored. Mr Patmore has said to himself, "Lift not the painted veil which those who live call life;" nay, he has said more, and will not even consent to remove the veil of social observances; and his reward is, that, though a self-conscious poet, he has got a wider and more gently undulating foreground for his poem than most of his contemporaries.

And first, his gift as a painter of nature is not slight, but it is limited by the considerations we have advanced with regard to his general sphere as an artist. He cannot realise his most transient emotions in an imagined landscape of natural beauty that completely expresses a phase of human feeling, like Tennyson. He cannot distil the realities of nature till they enter into his mind, and spiritualise his own moods, like Wordsworth; but he can take off a very true and lovely picture of what he has seen or conceived, so that we seem to smell the very flowers, and breathe the very breeze of which he sings. Thus he tells us:—

"I, in whom the sweet time wrought,
 Lay stretched within a lonely glade,
 Abandoned to delicious thought,
 Beneath the softly twinkling shade.
 The leaves, all stirring, mimick'd well
 A neighbouring rush of rivers cold,
 And, as the sun or shadow fell,
 So these were green, and those were gold;
 In dim recesses hyacinths drooped,
 And breadths of primrose cooled the air,
 Which, wandering through the woodland, stooped,
 And gathered perfumes here and there;
 Upon the spray the squirrel swung,
 And careless songsters, six or seven,
 Sung lofty songs the leaves among;
 Fit for their only listener, Heaven."

An equally poetical picture is the description of the Deanery of Sarum Close, where the scene of the poem is most often laid:—

“ ’Twas half my home six years ago ;
 The six years had not altered it :
 Red brick and ashlar, long and low,
 With dormers and with oriels lit.
 Geranium, lychnis, rose arrayed,
 The windows all wide-open thrown,
 And some one in the study played
 The wedding-march of Mendelssohn.
 And there it was I last took leave :
 ’Twas Christmas : I remember’d now
 The cruel girls, who feigned to grieve,
 Took down the evergreens, and how
 The laurel into blazes woke
 The fire, lighting the large, low room,
 A dim rich lustre of old oak
 And crimson velvet’s glowing gloom.”

These, and other still more delicately painted pictures, have all the life and harmony that only a poet can give. We do not say that they belong to the *highest* poetic class, for they do not profess to interpret, even so far as interpretation is possible, the tender and mystic symbols of natural beauty. Mr Patmore contents himself with simple delineation ; he neither constrains the manners of men to yield up the inner secrets of their characters, nor the complex forms of nature to reveal the deeper things of the Eternal Mind.

But we cannot look to have the same fountain of thought for all our poets ; and if the “power of hills” rests upon some of them, till it gives to all they utter the might and freedom of a “mountain tone,”—if

“ Blank misgivings of a creature
 Moving about in worlds not realised”

inspire others with a special art for translating into human speech the sweet and melancholy music of the air and sea,—not the less but the more grateful shall we be to receive from a poet of a different class those soft transcripts of nature, which are rather a fitting framework for human experience than a new enlargement of its sphere. This distinctly secondary place Nature certainly takes in Mr Patmore’s poems. His images taken from Nature usually come in the distinct form of similes—similes often of the most perfect grace and beauty,—but still *illustrations* of thought rather than its very form and body. The matured stage of exact analogy which the simile implies, points out at once that the thought came first, the illustration following ; in short, that there was not that perfect fusion between the mental

conception and the image which embodies it, which is given by the activity of the imagination in its most vivid moments. A new and perfect simile always implies a more considerate and slower fancy than a new and perfect metaphor. Thus, where Mr Patmore is describing the polite jealousy entertained by his hero for another young gentleman (who seems, by the way, to have been more deserving but less successful in his suit), he sings :—

“A man to please a girl ! though I
Retorting his forced smiles, the shrouds
Of wrath, so hid as she was by,
Sweet moon between her lighted clouds !”

Again, when he is recalling the “noble form and gentle state” of the lady he admires, he explains :—

“Her dress had brushed this wicket ; here
She turned her face and laugh’d, with looks
Like moonbeams on a wavering mere.”

There is genuine poetry in these touches, but clearly the nature is strictly subordinated to the human thought ; it does not blend with it, but rather clothes it ; there is not that perfect identity between the thought and the symbol which seems to deepen at the same time that it embodies the feeling of the poet. Nor can we look for the very highest poetry, even of *Nature*, from any poet who does not work on what we may call the primary strata of human life—the rugged affections, passions, and faiths which lie even deeper in our nature than

“The fair sum of six thousand years’
Traditions of civility,”

of which Mr Patmore so much loves to sing. There is something so awful, at times even appalling, about the mighty symbols and mysterious constancy of Nature’s life, that it will not amalgamate entirely with any but the very deepest element in man’s. The highest poetry of Nature is not Greek but Hebrew. The “mountains and the strong foundations of the earth” will give ear only to the “Lord’s controversy.” And, among English poets, Nature’s life has been the natural embodiment of human thought only where that thought has been quarried out of the substantial essence of our universal humanity. This cannot truly be said of any poet who draws so largely on the graces of social culture, and even of national manners and habits, as Mr Patmore. He sings of pleasant ramblings in a fair and well-tilled garden, not of wanderings on that primeval earth of forest and wilderness where man first learns to subdue Nature, and, by subduing, to respect and dimly understand her.

And this leads us to the qualifications of Mr Patmore’s genius

for painting character. He has one of the most distinguishing characteristics of a poet, an instinctive knowledge of the feminine cast of mind. His special insight into the emotional upper-currents of human experience, of which we have spoken, necessarily implies insight into feminine characteristics: for women *express* their whole mind through their manners far more constantly and adequately (though generally less openly) than men. It might almost be said to be a certain test, though by no means a necessary condition, of poetic genius, for a man to have the power of delineating perfectly feminine influences, and feminine modes of thought. Mr Kingsley has it. We do not know one of his masculine characters that is painted to the life, but many of his feminine characters breathe out the very essence of what Goethe used to call women's "reine Weiblichkeit und holde Umgebung." Many poets of all but the very first rank are without it; but no man who has it can help being in some degree a poet; for it implies, at least in a *man*, an imagination so receptive, so open to the most delicate impressions, in order to be able to delineate the ethereal essence of feminine influence, that other forms of life and beauty must necessarily enter at the same avenues. No man who can delineate women, can be without power to delineate also the fairer and softer aspects of nature, though he need not, of course, be able to grasp her more rugged and magnificent scenes. Mr Patmore has the power we have indicated in a very remarkable degree. His only fault is, if we may so express it, that he has a tendency, not to make women *too* feminine, which is impossible, but a little too small. Now, we cannot deny the very obvious fact of a certain limitation of mind—let us say shallowness—in a large proportion of women: but assuredly it is not the feminine cast of their character which makes them so. This Mr Patmore well knows, and on occasion can finely sing. Speaking of the nature of woman, he says, with wonderful beauty,

"No idle thought her instinct shrouds,
But fancy chequers settled sense,
Like alteration of the clouds
On noon-day's azure permanence."

But in his actual delineations he does not usually give us that "noon-day's azure permanence," but only a very limited sample of it, without indicating, as he should do, the soft breadths of sky which stretch far beyond the limits of his picture. This often destroys the beauty of his delineation, which is occasionally young-ladyish rather than feminine, and at such times loses sight of the deeper aspects of women's devotion. This is a fault Mr Kingsley always avoids; the great beauty of his feminine characters lies in the marvellous depth he ever gives them;

"Rest comes down upon their souls
From the everlasting deep."

We do not mean that Mr Patmore does not also, at times, give us fine glimpses of this. We have shown that he does. Not in vain does he ask, at the opening of his poem—

"Thou Primal Love, who grantest wings
And voices to the woodland birds,
Grant me the power of saying things
Too simple and too sweet for words."

But still the main fault of his poem is, that he makes his heroine a toy. We must confess at once that we think poorly of Honoria. We should object to her for a wife. She is prudish, and her nature is on a petty scale. She is worthy of the hero, but that is not saying very much for her. She is very inferior to her sisters, so far as we can catch glimpses of them in the sketch. The second daughter is much the best; and even Mildred, the youngest, "whose daisy eyes had learned to droop," is very much to be preferred to the eldest. We are told at first almost as much about Honoria as it was possible to tell; and here is the young lady with whom we are so ill-satisfied:—

"Was this her eldest, Honor; prude,
Who would not let me pull the swing;
Who, kissed at Christmas, called me rude,
And sobbed alone, and would not sing?
How changed! In shape, no tall, slim Grace,
But Venus; milder than the dove;
Her mother's air; her Norman face,
Her large, sweet eyes, clear lakes of love."

The picture is pretty and true to nature, and is adhered to throughout; but it is not a picture fitted to bring out the poetic or deep side of love. We have many complaints to make of the pettiness of the character. She does not *talk* with her lover, she *chats*. She is dignified on a small scale. When her hand is pressed, she "withdraws the rays"

"Which did till then enhance
Her fairness with its thanks for praise."

After marriage, she objects to her husband's song—what would certainly be no credit to her if true—

"I did not call you 'Dear' or 'Love,'
I think, till after Frank was born."

In short, she is altogether limited.

It is quite a relief, in the middle of this very "proper" love-making, to come across some of the things "too simple and too sweet for words," which are interspersed in the pauses of the courtship. You can scarcely believe sometimes, while Mr Patmore dwells on the small accustomed agonies of love, and explains,

with touching fidelity to the immemorial traditions of his subject, how pearls and lapis lazuli, and so forth, are "her beauty's fair prerogative,"—that he can write with so much breadth and depth as is shown, not only in special parts of his book, but at frequent intervals throughout it. The music of the following verses, for example, is not easily forgotten; meaning and form take hold of the mind with equal force, and the last two lines sum up the thought with that significant indication of an untold depth of feeling beyond, which we miss in the numerous sweet, easy, and flowing verses, of the kind we have just been criticising:—

"Love wakes men, once a life-time each;
They lift their heavy lids and look;
And lo! what one sweet page can teach
They read with joy, then shut the book.
And some give thanks, and some blaspheme,
And most forget; but either way,
*That and the Child's unheeded dream
Is all the light of all their day.*"

While we are on the subject of Mr Patmore's treatment of character, we must note that his incidental sketches are truer, and even more skilful, than his principal figures. The Dean himself is finely described; and we very much prefer a strong-minded old aunt, who appears once or twice on the scene, to the heroine herself. She is sketched with force and humour, and gives an exceedingly good and trustworthy opinion on the hero of the poem, though she is clearly too partial to the heroine. We feel a great admiration for this old lady, who would certainly have forbidden the banns if she could, and who yet with noble forgiveness of temper presented her niece with a "lovely shawl" as a wedding present, when she found that she could find no "lawful impediment!" We recommend her heartily to the notice of our readers.

The one great reason why Mr Patmore's poem does not take a wider and deeper range is to be found in his too direct mode of delineating the passion which is the subject of his poem. The natural and highest tendency of that passion is certainly not to set up an idol directly before our eyes, and magnify it after the minute and somewhat heathen tone of adulation into which this poem not unfrequently falls—though it as frequently rises far above it. "Love," said a great thinker, "is deepest in those minds in which it is not a primary but a secondary passion." We believe this to be a very deep truth as regards all human love, and it is a truth of which Mr Patmore frequently loses sight. Love is never deepest when it comes first among human motives; for its depth mainly depends on its *reverence*, and there can be no reverence in a love which does not see many higher ends than its own claims. Moreover, we do not believe

that it is natural to make an express object of the passion itself—to be on the look-out for love. An *amans amare* does not deserve to find what he seeks. Love that is the gradual and unconscious birth of blending sympathies is far higher and far more common and natural. As we have said, we have no great respect for the hero of this poem; and do not hesitate, therefore, to reject as entirely false to nature, in at least nine cases out of ten, his arbitrary dictum, that every unmarried man worth anything makes it his “chief thought in life” when he shall marry:—

“I kept the custom; I confess
 I never went to ball, or fête,
 Or show, but in pursuit express
 Of my predestinated mate;
 And thus to me, who had in sight
 The happy chance upon the cards,
 Each beauty blossomed in the light
 Of tender personal regards.”

We confess we think that if this were so, he deserved nothing better than to marry Honoria. Honoria seems to have had no interests beyond those of “tender personal regards,” in which they *could* have shared together; and the passion, therefore, to be described is all of it *explicit* passion for the lady, not that far higher kind of passion which springs originally from common sympathies and interests in thoughts and worlds beyond themselves. Idolatry is always small and poor; and it is the tendency to idolatry in the love-making of this poem which keeps it so often down to the level of the earth. Indeed, idolatry is the *stifling* element in almost all love-poetry which renders it so intolerable to read continuously; but it is also the *uneal* element which does not nourish love, but exhausts it. This is, in fact, the weakness of the “subjective” poetry, that it will dwell directly in the phenomena of passion, although an adequate delineation of it can only be given by its indirect influence on the *other* currents of thought and feeling. Mr Felix, going about like Cœlebs “in search of a wife,” precludes himself from finding all that he ought to want. The direct gaze of the mind weakens the delicate truthfulness of natural sympathies. The highest love is, we must repeat, not indeed unconscious, but certainly not of self-conscious origin; it springs from spiritual affinities, and tends to the delight of deeper sympathy rather than of constant mutual admiration. The theme of Mr Patmore’s poem is far too much the love of admiration. And consequently, the parts of it that are the most noble and poetical, are those in which the eye is lifted away from the lovers altogether into general contemplation. The “destined maid” sickens us. It is all very well to hear occasionally of the gusts that

"shook her curls and vexed the ribbons at her waist," but we can't stand too much of it. A poem such as Mr Patmore has set himself to write should not be content with delineating personal fascinations. Especially in the books he still proposes to give us must he beware of this. What may be pardonable up to the wedding, will be intolerable afterwards; and we shall expect in the future books to see the horizon of his poem expand—to see the blending of the religious and intellectual life of his hero and heroine—to see the mingling of waters between the river and the lake, and to see them mingle not merely as if they were drawn together by mutual attraction, but by those deeper currents, at work in them both, which force their waters to seek a common issue from the narrow banks within which they are confined. Mr Patmore seems to delight, like some other poets—Shelly for instance—in keeping the object of passion distinctly and separately in view; nay, he seems almost to dread the sympathy which might unite two minds in an unconscious identity of faith and love. He says, with much beauty, in one of his earliest poems, in the name of a man on the eve of his wedding:—

"He dreads lest time should make them twain,
Or use should let them run
With undistinguished heart and brain,
Like dew-drops, into one;
Not prescient of the strong defence
Of thoughts that still perplex
With all the countless difference
And sweet consent of sex."

And again, in this later poem:—

"And in the warmth of hand to hand,
Of heart to heart, he'll vow to note
And reverently understand
How the two spirits shine remote;
And ne'er to numb fine honour's nerve,
Nor let sweet awe in passion melt;
Nor fail, by courtesies, to observe
The space which makes attraction felt;
Nor cease to guard, like life, the sense
Which tells him that the embrace of love
Is o'er a gulf of difference
Love cannot sound, nor death remove."

This is finely said, as well as true; but it is not true, that to gaze over the gulf between mind and mind at the opposite shore is the course of action which "makes attraction felt." The difference is, in fact, the source of the attraction, but it can be felt only as the source of attraction in the act of exercising the powers and gifts which are so different; and of course it can be delineated only through a faithful delineation of such intel-

lectual and spiritual differences as find their complement and completion in union. No doubt such a delineation is a difficult task. But this is, as we understand it, the great purpose of Mr Patmore's poem; and it certainly is not answered by merely making his readers feel that Felix thought Honoria an angel, and Honoria thought Felix a god. This direct gazing at each other is not that "marriage of true minds" which he has undertaken to sing. He is bound to show us the unity of moral and intellectual difference, and that the *ground* of unity does not consist in the deficiency on either side, but in that completeness to which each helps the other to attain. Mr Patmore exercises the minds and hearts of his characters far too little on objects outside themselves. It is "love in idleness" all through his poem, and therefore not unfrequently degenerates into idle love. This is quite unworthy of his powers. There is no incident, no grief, no suspense, no spiritual doubt, no tasking effort, to bring out the sustaining strength of mutual love,—nothing that helps us to see how much greater is the union of love than the love of union. Love is blind only when it is self-consciously mistaking the part for the whole—the single ray of beauty for the entire splendour of perfection. But in action, in life, in the *indirect* strength it pours into another's soul, it is not blind; because the great realities of life and faith are kept full before the mind,—thus rectifying the partialities, while rejecting none of the help that purified love can give. Mr Patmore has a greater work before him than he has yet attempted, if he is to make his poem worthy of his theme. He must show us the growth of the affection, after the flutterings of gratified vanity and worshipping admiration have subsided; he must show it us in the keen fire of grief, and strengthened by self-sacrifice; he must show it us modifying the intellect, enlightening the conscience by mutual gleams of light and confirming trust. He is deeply impressed with one great truth, which he has finely expressed in the following lines. The rainbow, he reminds us, can only be seen by one who stands outside the "glittering shower." If you try to get too near it, you are enveloped in the cloud:—

"With whatsoever's lovely, know
It is not ours; stand off to see;
Of Beauty's apparition so
Puts on invisibility."

But there is another equally great truth which his poem does not express,—the truth that *seeing*, after all, is not the way to *assimilate* spiritual beauty, nay, is often the way to lose all hold of it; for mere *sight*, even the poet's sight, constantly substitutes the partial for the perfect glory, where *life*, with its anxious toil

and want, would reject none of the blessing, and yet would recognise all the deficiency.

Mr Patmore seems to us to take at once an exaggerated view of women's natural graces, and a very depreciating view of their capacities for growth. Let us admit freely that women are often quite as dull, and, if dull, a vast deal more insipid and wearisome than men. We think there must be something of strange idiosyncrasy in Mr Patmore's constitution if he can truly say—

“Yet if I come where women are,
How sad soever I was before,
Then is my sadness banished far.”

At least our experience is not similar. The “sudden polar spring” comes to us quite as often from the influence of men as from that of women, if we are to speak generally and in the rough. On the other hand, while flattering thus their sunny influence, he treats them as if they had no more capacity for moral and intellectual growth than a flower or a bird; and, in his very fine “parallel” between men and women, assigns all the gradual progress to those, and attributes an involuntary blossoming to these:—

“Where she succeeds with cloudless brow
In common and in holy course,
He fails, in spite of prayer and vow,
And agonies of faith and force. . . .
Her spirit, compact of gentleness,
If Heaven postpones or grants her prayer,
Conceives no pride in its success,
And in its failure no despair;
But his, enamoured of its hurt,
Baffled, blasphemes, or, not denied,
Crows from the dunghill of desert,
And wags its ugly wings for pride.
He's never young nor ripe; she grows
More infantine, auroral, mild,
And still the more she lives and knows,
The lovelier she's expressed a child. .
Or say she wants the patient brain
To track shy truth: her facile wit
At that which he hunts down with pain
Flies straight, and does exactly hit.
Were she but half of what she is,
He twice himself, mere love alone,
Her special crown, as truth is his,
Gives title to the loftier throne:
For love is substance, truth the form;
Truth without love were less than nought;
But blindest love is sweet and warm,
And full of truth not shaped by thought.”

This is very beautiful and full of insight, but it is one-sided insight, which, if carried too far, will injure the poem Mr Patmore is writing. It would be truer to say that justice is more native to men, and self-devotion to women; and as both justice and self-devotion are equally mingled in that Divine and highest love which St Paul calls *charity*,—the universal sympathy, that is, with the fair spirit of goodness, innocence, or penitence,—we cannot fairly say that either has the “substance,” while the other has the “form.” All love is, no doubt, full of implicit truth, as Mr Patmore says; but often a great deal more than the mere *shaping of thought* is needed to distil from the concrete feminine love of which he is singing, the *Truth* which it really contains in solution.

We have criticised freely Mr Patmore’s poem, because we think it every way worthy of careful and close criticism. Mr Patmore is clearly a poet—a poet, we mean, by vocation, who has indeed received

• “The power of saying things
Too simple and too sweet for words.”

And he is not only a poet, but a poet whose mind has grown visibly and rapidly since his earliest productions. There are, no doubt, in the volume of poems called “Tamerton Church Tower,” many indications that he was not merely one of those who, in the opening years of youth, feel the necessity for some deeper expression of their feelings than ordinary speech permits, but whose powers, when expanded and developed, tend either to abstract or practical pursuits. Almost all young men of sensitive temperament write verses, of more or less merit, as a kind of safety-valve for emotion, in that intensely “subjective” period of life when, living as they do in a subjective era, they may be called (by a slight twist of the detestable transcendental phraseology of the day), *subjecto-subjective*; subjective in the first degree by inheritance, and doubly subjective through the self-conscious temperament of youth. Mr Patmore’s early verses were not of this kind. They showed the happy discriminating insight and tact of expression which are so conspicuous in his later poem. Still, they had all the limpness, the want of firm texture, purpose, sustained thought, and clear conception, which distinguish the *turbid* period of the intellectual life. You can see in them, as in the chrysalis, what he himself has finely called

“The blind uneasy motions
That foretell the higher life.”

As far as the art of *expression* goes, his genius will probably go no further. The simplicity, the taste, and harmony of his verse, is all that we could wish. But he has yet to gain much of the grasp of truth, and the “power of more melancholy wisdom,”

which distinguishes the maturest life. We do not wish him to become abstract, for *that* a poet can never be; but the same mental tendency which, in ordinary men, tends towards abstract modes of thought as they advance towards maturity, may be of great use to his genius. A little more of the primeval rock on which our life is based, and a little less of the overlaying flowers and sod, would add dignity and interest to Mr Patmore's landscape. This, we think, it will be the natural tendency of age, and of that decision and even inflexibility of thought which age brings with it, to give. There is no fear that it can do him any harm. He never analyses, he never reasons; he always *delineates*, in a living form, the intellectual truths he wishes to enforce; and if these truths should, in future, occupy a somewhat greater share in his mind, and the little accessories of delineative skill a somewhat less share, the effect of his pictures can only be enhanced. Indeed, we would gladly see the sequel of his poem even more full than the introduction, of thoughts so noble and so exquisitely presented as we find in the following lines:—

“ Would Wisdom for herself be woo'd,
 And wake the foolish from his dream,
 She must be glad as well as good,
 And must not only be but seem.
 Beauty and joy are hers by right;
 And, knowing this, I wonder less
 That she's so scorned, when falsely dight
 In misery and ugliness.
 What's that which Heaven to man endears,
 And that, which eyes no sooner see
 Than the heart says, with floods of tears,
 ' Ah! that's the thing which I would be? '
 Not childhood, full of fears and fret;
 Not youth, impatient to disown
 Those visions high, which to forget
 Were worse than never to have known. . . .
 Not these; but souls found here and there,
 Oases in our waste of sin,
 When everything is well and fair,
 And God remits his discipline,
 Whose sweet subdual of the world
 The worldling scarce can recognise;
 And ridicule, against it hurled,
 Drops with a broken sting and dies.
 They live by law, not like the fool,
 But like the bard who freely sings
 In strictest bonds of rhyme and rule,
 And finds in them not bonds but wings.”

RECENT PUBLICATIONS.

ART. XI.—I. *On Beauty: Three Discourses delivered in the University of Edinburgh. With an Exposition of the Doctrine of the Beautiful according to Plato.* By JOHN STUART BLACKIE, Professor of Greek in the University, and of Ancient Literature to the Royal Scottish Academy. Edinburgh: Sutherland and Knox. 1858.

HEGEL said to a friend who was watching by his deathbed, "I have no one who can explain me to the world except yourself, and even you do not understand me." We are far from applying the left-handed compliment of the apostle of absolute idealism to Professor Blackie. But, touching the exposition of Platonism to this somewhat unsentimental generation, the ghost of the great Athenian idealist might appropriately address our author in the former part of the saying. Whether, in its contact with "our German brethren," it has, in its wanderings from brain to brain, caught enough of humour to fit it for the use of the latter part, it is not for us to guess. Whether the "Spirit of Plato" is worth listening to, and whether his philosophy will becomingly graft on the Scottish stock, are questions to be dealt with on the merits. Our persuasion is that we need Plato, and especially Professor Blackie's exposition of his views, both in our colleges and in our academies of art. And if Ethics and Psychology are to be only *academically* discussed, the one will be much the better of his genial sunny thoughts on the *ἀγαθόν*, the good; and the other would get benefit by direct, full, and warm sympathy with his views of the *καλόν*, the beautiful, the noble. We cordially thank Professor Blackie for setting our minds astir on these matters, and for his dashing and thoroughly able Discourses on Beauty. He brushes aside long accepted theories of the Beautiful, like so many cob-webs, and guides us straight towards those great thoughts which underlie the visible and the apparent. And, no doubt, as Wordsworth puts it—

"When deeply drinking in the soul of things,
We shall be wise perforce."

Frank, generous, enthusiastic, a man with broad flesh and blood sympathies, richly endowed with intellectual gifts, having a memory stored with the products of ancient and modern thought, gifted with a fine taste, and withal, possessing poetical genius more than second-rate, no one is entitled to speak with more authority on Beauty than Professor Blackie, and no one is so well fitted as he to smash the alleged "contemptible commodious theory" of Jeffrey, and to win thinkers to the views of Plato. We once intended to have devoted much more space to this notice than we can now do. This, however, has become less needful because of the note on Beauty in another article of our present Number (Dugald Stewart), and because, in Article III., full expression is given to our idea of Beauty in Architecture. But we have read most of this book with so much pleasure, and we recently

so thoroughly enjoyed the Professor's *ἐξωτερικοὶ λόγοι* on the same subject at the *Ulster Lecture*, (thanks to Miss C. Sinclair), that we cannot leave the Discourses on Beauty without some remarks. As we glance at the many things in heaven and earth which the accomplished Professor presses into his service for illustration and proof, we remember the words of Socrates :—" Dear me, how much more knowing men now are than those of the olden time." Had Jeffrey possessed a tithe of the varied information here brought to the discussion of Beauty, his theory would have lasted longer. We would not have so easily seen through it. We would have gone on blindly mistaking darkness for depth. We wonder, too, what they (and there are still a goodly number of the old generation in Edinburgh), who used to look to *Craigerook* as the home of one infallible in all æsthetical matters think, when they behold their idol so roughly handled by Professor Blackie? They must read with astonishment of Jeffrey as the man " whose shallow sophisms were propounded with graceful dexterity," p. 4; " who ignorantly quotes the *Hippius Major* of Plato for his notions on Beauty, instead of the *Philebus*," p. 47; and " who " (" a very notable fact in the history of human delusion !") " promulgated in religious Edinburgh, at the beginning of this eighteenth (?) century a sceptical system with regard to the τὸ καλόν, directly hostile to all faith in a Divine order of things in the visible world," p. 160. Alas for the fame of Jeffrey, and the merits of the last edition of the *Encyclopædia Britannica*, if all this be to the point !

We have as low an estimate of the " Association Theory " as our author ; and hold by the broad, Saxon-like, and common sense views of Sir Joshua Reynolds, whose words, we think, might have fairly claimed from the Professor a place among " The Testimonies of the Wise." " He who is ambitious," says Sir Joshua, (Lect. VIII.) " to enlarge the boundaries of his art, must extend his views beyond the precepts which are found in books, or may be drawn from the practice of his predecessors, to a knowledge of those precepts in the mind, those operations of the intellectual nature, to which everything that aspires to please must be proportioned and accommodated." Again, in Lect. IX., he remarks, with a force that might please a Platonist, " The art which we profess has Beauty for its object ; this it is our business to discover and to express. The beauty of which we are in quest is general and intellectual. It is an idea that subsists only in the mind ; the sight never beheld it, nor has the hand expressed it ; it is an idea residing in the breast of the artist, which he is always labouring to impart, and which he dies at last without imparting, but which he is yet so far able to communicate as to raise the thoughts and extend the views of the spectator ; and which, by a succession of art, may be so far diffused, that its effects may extend themselves imperceptibly into public benefits, and be among the means of bestowing on whole nations refinement of taste." But, dissenting as we do from the " Association Theory of Beauty," is the Platonic theory to be regarded as properly its opposite? We suspect that there is much more common to the two than Professor Blackie would be willing to admit. We are aware of the

fearful risk of this statement, and know that we expose ourselves to a whole host of charges of ignorance, rashness, and the like. But what really was the Platonic standard of the good and the beautiful? Was it not that the moral quality, or the object contemplated, should harmonize with the absolute good and true; and becoming, as known by the soul in its perfect pre-existent state, the reminiscence of which it had brought with it into this world—a world fair, indeed, but never so fair as the super-sensible? But is this not “Association” under a different name? In the case of the Athenian, the soul only wandered into another world for its foundation! Of course, this could not be expected from Lord Jeffrey, whose soul, we imagine, had at that time no other world thoughts of any sort. Now, (to take the Professor’s graphic illustrations,) wherein lies the difference between my estimate of the beauty of a perfect sphere, because I associate it with the happiness of “my boy Tommy” when he played with it in bib and tucker, or of the oblate-spheroid, because I remember how my teacher used to look blithely learned when he brought it out to illustrate the shape of the earth, and Plato’s estimate of the beauty of the same forms, because they seem to give perfect expression to the archetypes (*παράδειγμα*), which reminiscence makes known as existent in that world, up or down, from which the Platonic souls came? Logically, we suspect the estimates must be held as founded on a process entirely the same. If the other world had thrown its spell over Jeffrey when he wrote the famous article on Beauty, he might have been a Platonist also! The plain truth is, that, even with Professor Blackie as the interpreter of Plato to this matter-of-fact generation, we do not wish to be bound by Plato as an authority. He may be too good for us, but we confess we would rather follow his interpreter than himself. Professor Blackie holds that Beauty, like Truth, is eternal,—that the idea of the beautiful has its roots deep down in our truest spiritual nature, and that they twist round, and even seem to form part of the true man in man—the very *ego*, spiritual, imperishable, immortal,—and that it is innate and everlasting. All this we grant, even as we hold that the moral faculty is; but this does not necessarily imply that the utterance of the idea will either be uniform or true, or that we have any unvarying standard of beauty. This, let us say, we consider the weak point in the volume now glanced at; it is a point, too, which got great prominence assigned to it at the delightful *Ulbster Lecture*. The question comes virtually to be this—if we have no true, eternal, and thoroughly reliable standard of Beauty, can we have any such of Morality? Now, looking at the question from the non-Christian point of view, we would frankly answer, No. Thus, the variable standard of morality in different ages and climes: thus, the constant power in shifting circumstances and interests to turn the moral faculty from true decisions. We call Commissioner Yeh a murderer; but the stolid Mandarin reckoned it perfect political virtue to cut off thousands of heads on the whim of the moment. So with the standard of Beauty. It was not in Plato’s power to fix it, and our author should entertain this thought at once. It will save him from much disappointment. The standard is variable,

and *must* ever continue so. Dr Livingstone's Travels bear testimony to the direct antagonism between the African's ideal of beauty and our own. Has Professor Blackie forgotten his friend Professor Simpson's story of the Islanders who remove the cartilage of the nose and insert a bit of wood to elevate it out of all proportion to the face, in order to seem beautiful? Yet, we have an unvarying, unerring, standard of morality. We were in no need of a *theory* of morals; the world has ever had abundance of *theories*; what we needed was a *revelation*, and God has given us this in the Bible. But though we have the faculty for loving the beautiful in nature and art, we have no infallible bible of Beauty—no unerring standard of appeal. The world is not: because we cannot so deal with its parts, or so generalise its details, as to satisfy all. We suppose, then, that each will be content to fall back on his own ideal, and call that beautiful which answers to it "as ocean's moon does to the moon in sky." We grant that this ideal may be influenced, may be trained, and that in some it is purer and nobler than in others; and with this in view, Professor Blackie has a broad platform of operation.

We are curious to know why the Professor looks so palpably askew at the attitude of Scottish Christianity to the fine arts. He clearly holds that the strong Calvinistic element in it is not only shy of art, but directly hostile to it. We wholly demur to this estimate, and call for proof. We will not take the alleged historical testimony to our religious vandalism, as shown in the destruction of pre-reformation buildings. There may have been something of this during a period of strong emotions and great social changes; but were this the place, we hold it capable of proof that the "interesting ruins" were fast forming, before the enraged populace took to the work of spoiling "the rooks' nests," smashing a nose of the virgin here and there, or beheading a stone-saint. The abbeys and picturesque churches had been neglected by the priesthood; and when the Reformation became a reality, the nobles and landed gentry grasped at the church revenues, and rendered it impossible for the Church to do more than obtain the plainest buildings to worship in. The talk about grim Calvinism on the part of a generous-hearted Scotchman, like Professor Blackie, is too much. If he finds people in Scotland who refuse to see beauty in pictures, and sculpture, and architecture, and who would deny these all regard, as sinful and profane, let him not set it down to Scotch Calvinism, for there is a right, genial, sunny heart in Calvinism, whether he may acknowledge it or no. How could it be otherwise, when the soul, instructed in this system of doctrine, which contains the grandest purely intellectual generalizations of the thoughts of God, must, if a living soul, stand consciously in the favour of Him of whose own beauty the world is lavishly full, and be time after time receiving the joy unspeakable and full of glory. Whatever system may abjure beauty, it is not certainly the Calvinistic. The sooner we stand up for this the better. But, the fact is, the charge is the result of a misconception both of the sphere of art and of the genius of the Scottish Church. We believe that the place of sculpture and painting is outside, but do

not think that we value them less, or have less enjoyment in them than our author. A place of worship is a necessity; and we hold that the most rigid Calvinism would not quarrel with the finest Gothic structure ever reared. Distracting accessories of the Gothic it might be displeased with, and wish to banish "the thousand heraldries," "twilight saints," "dim emblazonings," and "shielded scutcheon blushed with blood of queens and kings," which awed the imagination of Keats, but it would not reject the "casement high and tripple arched—"

" All garlanded with carven imageries,
Of fruits and flowers, and bunches of knot-grass."

But why not copy the heathen, and why not follow the footsteps of a corrupted Christianity, and gather into one all the glory and beauty which still linger around "poor shrivelled and crippled humanity?"—(P. 9). We have no objection to this, only we would not take the expression of the generalized elements of wisdom, of love, or of joy, into the sanctuary, as if He with whom we seek to meet there, would be pleased with the wonders of human skill. Granted for a moment that it were within the scope of the artist's power to gather into one the many broken rays of wisdom, and express these in a form which would suggest perfect wisdom, would not this be doing no more than what, without it, is already before God. If there be lingering good in poor humanity, as much as is in every man is already seen by Him, and He accepts its homage, for all His works praise Him. Yet, though banished from the sanctuary, we can see a noble sphere in which art may throw abroad its intellectually elevating and refining influences to good effect—even in our halls of public resort, in our lecture-rooms, and in our dwellings. The history of the progress of art in Scotland, during the last twenty years, is proof in point that we are not so far behind as Professor Blackie, with kindly exaggeration, would have us believe, and that it is not needful, in order to secure advancement towards great excellence in painting and in sculpture, that we should adorn with them the interior of our churches.

So frankly does Professor Blackie deal with all these topics in his very able Discourses on Beauty, that we have followed a like freedom of remark. In conclusion, we sincerely hope that the Professor may be soon led to elaborate other portions of that "complete scheme of a large work on æsthetic philosophy, which he possesses among his manuscripts." Meanwhile, we accept the Three Discourses on Beauty as a most welcome instalment.

- II.—1. *The Students' Manual of Geology.* By J. BEETR JUKES, M.A., F.R.S., etc. Edinburgh: Adam and Charles Black.
2. *Geologie Appliquée—Traité Du Gisement et De L'Exploitation Des Minéraux Utiles.* Par. M. A. AMEDEV BURAT. Deux Parties. Paris: Langlois et Leclercq.
3. *Scripture and Science not at Variance.* By JOHN H. PRATT, M.A., Archdeacon of Calcutta. London: Thomas Hatchard. Calcutta: R. C. Lepage and Co. 1858.

THE works named above, well represent the motives by which three

classes of minds are drawn to the study of Geology. The first is devoted to a purely scientific treatment of the subject. Without any attempts to force facts into harmony with previously formed theories, we are simply asked, by one who from his exact and varied attainments as a field geologist is entitled to speak with authority, to learn the chemical and mineralogical character of the rocks, their peculiarities of deposition and stratification; the remains of animal life and of vegetation, which lie hid in them, and as much as can be safely affirmed of the order of their appearance. The second work carries the labours of the field geologist into direct practical issues. In common with Mr Jukes, the author of "*Geologie Appliquée*," treats of the order of the rocks *in situ*, looks at them with the eye of a highly accomplished mineralogist, examines carefully their chemical and mechanical structure; but, while the former makes all these observations bases for palæontology, the latter sets them in purely industrial and economic lights, by using them in mining and engineering purposes. Much of the third work is devoted to the exposition of the relation held to exist between Geology and Scripture, and is to be regarded as another of those contributions to the literature of physico-theological science, so many of which have recently claimed the notice of our readers.

As long as the three classes of minds now referred to continue to be directed to geological studies, we may count on the multiplication of works peculiar to each. The ever widening field of speculation which must result from the rapidly increasing knowledge of the earth's crust, will continue to attract multitudes of earnest minds, for whose satisfaction a fresh many-sided literature is sure to be forthcoming. Thus, every contribution to natural science, made by men competent to the task, will not fail to be welcomed. Were there no other motive-forces at work, though there are many, the demand would certainly create the supply. All who love the science for its own sake will rejoice in every addition to our knowledge of phenomena. Those, again, who have constantly before them the probable industrial bearings of new discoveries in geology, will follow earnestly in the path of geological investigation, and will be ever on the alert for whatever shall seem capable of being applied to the material wealth of the nation. And those whose studies have been much in the Word of God, will readily welcome the works of any man, who shall tell us yet more of His presence in the world also; but the fact, that ill-informed minds have contrived to speak strongly and plausibly of a want of harmony between science and scripture touching creation, comes to give an apologetic cast to many works in this last department. Not many years have gone by since we placed the first direct contribution to this on our book shelves, but now we can count them by scores. When the charges of contradiction were openly made, it was found that in all the churches, Protestant and Romanist, "reconcilers" actually abounded. Looking at the results, we confess, we would have been thankful for fewer.

But leaving this line of remark, we turn with pleasure to the

masterly work of Mr Jukes. "Early," he says, "in the year 1854, the late Professor Edward Forbes asked me to be his fellow-labourer in writing the article on geology in the new edition of the *Encyclopædia Britannica*, and a text-book to be founded on it." The death of E. Forbes—a man not only among the greatest of this age, but one of the most loveable we ever met—interfered with this proposed brotherhood of action, and Mr Jukes undertook the task alone. "The Student's Manual of Geology" is the result; the title is appropriate, because the work is not likely to become a favourite with any save those who study in order to thoroughly scientific attainments. It has little of that popular attractiveness which is found in richly descriptive power, in the graphic statement of the curiosities of the science, or in the off-hand geology-made-easy method of treatment. We like it all the better for this. No attempt is made to persuade the student that this peculiarly difficult science may be profitably followed without long, careful, earnest, and laborious study, both in the library and in the field. As a handbook for the student, and generally as a book of reference, the "Manual" will be found of great value. Not indeed that it is a mere bald catalogue of hard names, or that it is destitute of those speculations as to the causes of phenomena, which will ever give interest to the highest kinds of manuals of science; because, as we shall see, there is a good deal of this employed in a way which gives us a high estimate both of the author's science, and of his common sense. Nor is this opinion modified, when we discover here and there the frank expression of doubt on several points, on which a less practical geologist would at once have dogmatised.

In a well written introduction, Mr Jukes points out the scope of geology, its relation to chemistry, to mineralogy, and, in one great branch of it, to zoology and botany. He insists on a knowledge of these, in order to the successful study of this science. "In order," he says, to "reduce the great subject of geology to something like order, it appears to me advisable to divide it into three heads, for which we may use the terms—1, Geognosy; 2, Palæontology; 3, The history of the formation of the Series of Stratified Rocks. . . . By Geognosy, I would understand, then, the study of the structure of rocks, independently of their arrangement into a chronological series, and I would divide it into two parts—Lithology and Petrology. By Lithology I would mean the study of the internal structure, the mineralogical composition, the texture, and other characters of rocks, such as could be determined in the closet by the aid of hand specimens." It will be observed, that in the "Manual," the sphere of Lithology is restricted to what has usually been reckoned the province of mineralogy proper, and is not made, as the late Professor Fleming made it, to include all questions touching the divisions of strata and the relative positions of different series of rocks. These come in under Petrology. There can be no doubt, but that this distribution of geology will be helpful to the student. The chapter on Aqueous Rocks, is full of interesting matter. It would, however, have been

better if Mr Jukes had not turned aside to state the alleged cause of glacier motion. While Professor James Forbes' Theory (not as we think very clearly and happily stated by our author) is accepted in the text, we have reference made in a note to the objections taken to it by Professors Tyndal and Huxley, and their theory of fracture and regelation is given, as if Forbes' Theory had been conclusively set aside. But Mr Jukes knows, that the exposition of the laws of glacier motion, given so graphically by the accomplished Edinburgh Professor, is that which is still received by the great majority of men of science, as the most satisfactory of the three theories which have been proposed, namely the *gravitation* theory of De Saussure and Hopkins; the *dilatation* theory of Charpentier and Agassiz, and what we suppose we may call the *river* theory of Forbes. It seems to us that the views of Tyndal and Huxley, may be resolved into the theory of dilatation. By a series of beautiful experiments, Forbes showed that the laws of glacier motion are much the same as those which govern the course of rivers. That is, that the progress is faster at the centre than at the sides, more rapid at the surface than at the bottom, and *the same by night as by day*.

In referring to the deposition of mud by rivers, the views of Mr Babbage and the calculations of Sir Charles Lyell, are given by the author. They seem quoted as if conclusive. But it is well to bear in mind that there is a growing tendency to question the trustworthy character of the alleged data for these calculations. The subjects treated of under Petrology,¹ give Mr Jukes free scope for the employment of all his information as a field geologist, and he does not fail to use it successfully in all his discussions. His correct appreciation of the relation of modern zoology and botany to palæontology, is shown by the prominence assigned to these studies as indispensable to the palæontologist. Under this division, we have a resumé of the different views held on the distribution of plants and animals; and special favourable notice is taken of the well known theory of Edward Forbes, on generic centres of creation. This theory does not now bulk out so largely as it would have continued to do, had the lamented author of it been spared to multiply what he held to be illustrations of it, but what others have regarded as capable of another kind of explanation.

Another distinguishing excellent feature of the Manual, is the presence of a catalogue of fossil animals and plants—the catalogue of animals being formed according to the system of Pictet, modified so as to admit of the great improvements of Professor Owen; and that of plants is based on "Broun's Index Palæontologicus." The descriptive outlines of the different great groups of strata are also followed by lists of their characteristic fossils. The last division of "The Manual" contains some exceedingly interesting remarks on the chronological appearance of the various formations. These remarks are valuable, as going to smash all those imaginative efforts which

¹ We prefer the old way of writing this word—*Petralogy*.

have recently been revived, to find a cut and dry correspondence between the formation of the earth's crust and the days of Genesis.

We would specially direct the attention of our readers to the remarks, at p. 401, on this subject. The sum of Mr Jukes' statements may be given in a few words from the last book mentioned above:—"I think," says Archdeacon Pratt, when referring to the *age-theory*, "that some of the most eminent geologists are of opinion, that the division of the geological periods cannot be made out satisfactorily, so as to coincide with this interpretation"—(P. 38). Mr Jukes, on good grounds, characterises the commencement of the so called Primary Epoch, as "necessarily uncertain, doubtful, and irregular." Periods of great change are acknowledged in the introduction of the Secondary and Tertiary Epochs, but these are associated with phenomena, which led Edward Forbes to propose the rejection of the present arrangement according to *three* great divisions, and to include all under *two*, namely, the Palæozoic and the Neozoic. After these remarks, we need scarcely say that we very cordially recommend "The Student's Manual of Geology."

M. Amédée Burat is Professor of Geology and Mining in the Central School of Arts and Manufactures, Paris. The volumes quoted above are devoted to the survey of geology from the point of view of the mining engineer, and to its application to the successful working of mines. Having in the first volume, that devoted to practical geology (*Geologie Pratique*), given a clear and popular account of the soil—shown its relation to the underlying rocks—discussed theories of aqueous and volcanic action—stated, as only an accomplished man of science could, certain fundamental principles, according to which rocks are classified; and having described the principal metaliferous districts of the Old and the New World, M. Burat, in his second volume, devoted to mining (*Exploitation des Mines*), assumes this knowledge, and upon it as a basis proceeds to the illustration of mining operations. Much attention is bestowed on methods of mining, and on the machinery best fitted to be helpful to the work. The author has a good knowledge of the various mechanical appliances in use in different countries. These he passes in review—gives drawings of the most useful—and describes carefully the manner of their employment. We had intended to illustrate these remarks by quotations, but the space devoted to Mr B. Jukes' work compels us to be brief. We can, however, assure all who take an interest in the subjects to which we have referred, that they will find the well written work of M. Burat useful.

The views advocated by Archdeacon Pratt, in his "Scripture and Science not at Variance," are identical with those to which much prominence have been given in this Review. They were expounded in our first volume, and they have been repeatedly set forth in succeeding volumes. A few sentences from the geological portion of the Archdeacon's able apology, will best indicate to our readers the line of remark followed by him. "The Book of Nature and the Word of God emanate from the same infallible Author, and therefore cannot

be at variance. But man is a fallible interpreter; and by mistaking one or both of these Divine records, he forces them too often into unnatural conflict"—(P. 8). "Since Scripture is not designed to teach us Natural Philosophy, it is altogether beside the mark to attempt to make out a cosmogony from its statements, which are not only too brief for the purpose, but are expressed in language not fitted nor intended to convey such information"—(P. 35). "There is one class of interpreters, however, with whom I find it impossible to agree. I mean those who take the six days to be six periods of unknown indefinite length"—(P. 37). On the existence of death before the introduction of sin, the author makes some judicious remarks. Having quoted, "By one man sin entered into the world, and death by sin," he says, "And no doubt, when ignorant of the facts which the Book of Nature reveals, we should conclude, from the apostle's words, that the sin of Adam had brought death upon the irrational as well as the rational creature. But is this the necessary meaning of the passage? By no means. Science here comes to our aid to correct the impressions we gather from Scripture; and we learn from the apostle that sin had degraded God's intellectual creature to the level of the brutes in his animal nature, and in his spiritual to that of a lost and fallen being"—(P. 39):

- III.—1. *Tableau de l'Eloquence Chretienne au IV.^e Siecle.* Par M. VILLEMAMIN. Paris, Didier et Co.
2. *Histoire de Saint Augustin.* Par M. Poujoulat. Paris, A. VATON. 2 vol.
3. *Der heilige Augustinus dargestellt.* Von C. BINDEMANN, Doctor u. Professor d. Theologie. Leipzig, H. Schultze. * Band I. u. II.
4. *Der heilige Augustinus.* Von PHILIPP SCHAFF, Doctor u. Prof. d. Theologie am Prediger-Seminar zu Merckersburg. Berlin, W. Hertz.

AUGUSTINE is undoubtedly in one sense the greatest of theologians, for more than any other divine has he, since the period of his first attaining to distinction, given an impulse to, and exercised an influence over, the theologic mind of Western Christendom. Other distinguished ecclesiastics have had their intellectual sway limited by country, confined by language, or, perhaps, even circumscribed by sect. But the Bishop of Hippo has, for fourteen centuries, possessed an influence in which he has been without an equal. While the Latin Church remained unbroken, and the Roman language continued the one medium alike of philosophy and theology for Europe, the sway of the "Doctor of Grace" was undisputed by any compeer. Minds of the most opposite character, and of the most diverse training, agreed in classing themselves as pupils in his school; intellectual homage was rendered to him alike by Anselm and Bernard and Abelard, alike by Dante and by Petrarch. And if we would measure the amount of service which Augustine rendered, we must not compare the Middle Ages with some

choice era of Modern Evangelic and Protestant Christianity; we must contrast them with the contemporary period in the Eastern Church. Oriental Christendom hardly knew Augustine's name, and was entirely unswayed by his writings. Those writings prepared the way for a revival in Europe; and gave direction, in subordination to the Bible, to that Reformation. The East wanted a religious teacher possessing Augustine's spiritual depth; hence, in spite of all her great Christian writers anterior to, or contemporary with, the Bishop of Hippo, she became blighted, and, through the lapse of century after century, still continues barren. The works before us are some of the recent Continental contributions to the appreciation of the greatest of the Fathers. With the twin literary glories of the Gallican Church in the "Grand Siècle," Port-Royal, and Saint Maur, the name of Augustine is inseparably associated. The veneration and the indebtedness of Bossuet to the Bishop of Hippo are well known. In the chill philosophism of the eighteenth century he was, of course, neglected. Rousseau had the audacity to speak of him as a mere "rheteur," a name of reproach far more applicable to Jean Jacques himself. In France, as elsewhere, the nineteenth century stands out in marked and honourable contrast to its predecessor, and in nothing is this contrast more evident than in the reconsidering and reversing many of the judgments which that self-complacent age had passed. "We are," says M. Sainte-Beuve, "decidedly the most retrospective of ages; we are never wearied of searching into and unrolling for the hundredth time the past."

The revival of interest in Augustine was commenced by Chateaubriand. In his "*Genie de Christianisme*," he recalled attention to the intellectual merits of his works; in his "*Itinéraire de Paris à Jérusalem*," he paid a loving tribute to the religious excellencies of his character. The seed thus cast has borne ample fruit in the volume of M. Villemain.

In the work of M. Villemain now before us, Augustine occupies by far the largest place. In so far as fulness of treatment is concerned, he is foremost as representative of Christian eloquence in the fourth century—a title which we may, in passing, remark, is not altogether correct in respect of him, as the greater part by far, both of his sermons and his writings in general, was composed after the fifth century had begun. Distinguished literary men of our country have not always been happy in their treatment of subjects within the range of theology; the theological chapters of M. Hallam's "*Literature of Europe*" are much the least satisfactory of any (he, for instance, almost ignores the whole Puritan authorship); and Sir James Stephen has given but an inaccurate portrait of Anselm, while he has executed what is little better than a caricature of Calvin. But M. Villemain cannot be charged with the doing of injustice, either by faint colouring or by inaccurate drawing, to the great Christian writers whom he has undertaken to portray. There is no deception in the title which he has prefixed to his most interesting volume. Its limits, of course, preclude anything like the fulness of treatment which he has given in

his great work on the eighteenth century. The volume resembles more the rapid but vigorous, thoughtful, and brilliant work of M. de Barante on that same eighteenth century.

M. Villemain apologises towards the close of his notice of Augustine, for having given to his readers, from want of space, an imperfect view of writings so diverse in subject, and so voluminous in extent. The plea is a fair one; but its fairness would have been more fully admitted, if he had adhered more closely to his professed subject. He has given a number of extracts from Augustine, which pretty fully represent both the earlier and the later productions of his pen. These extracts are well chosen; and the translation, while condensing the original expression, is faithful to the meaning. But among those extracts there is not one from the sermons of the Bishop of Hippo. M. Villemain is justly proud of the French pulpit as it existed in its palmiest days. In one of his earlier writings he had remarked, "The eloquence of the Gallican Church is perhaps the finest evidence of our literary superiority." There seems to be a tacit reference to the elaborate efforts of the great preachers in the "Grand Siècle" in his criticisms upon Augustine's preaching. But this is unfair. There have come down to us no fewer than 363 acknowledged sermons of this Father, not to speak of his Expositions of the Psalms and of John's Gospel. This immense mass of discourses bears testimony both to the assiduity of the Bishop and the veneration in which his memory has been held. But it is out of the question to look for hundreds of finished compositions from any mind, even one so furnished and so fertile as that of Augustine. "No art," says M. Villemain, "no method reigns in his sermons. They differ as much from the elegant homilies of Chrysostom, as the rude manners of the sailors of Hippo differed from the artistic and luxurious society of Constantinople." This is too strongly put. We admit that Augustine cannot be claimed as an elaborate pulpit orator. But his sermons are eminently worthy of study as examples of telling power. They do not indeed harmonize with the practice of modern preachers. Our modern preachers of one class will object to their brevity; their average length is about twenty minutes. Those of an opposite class will be revolted by their homeliness—for Augustine had no idea of what has been called "the dignity of the pulpit." He is homely as Latimer, or blunt as South. His periods in his philosophical and controversial writings, and even in the more elaborate of his Epistles, are not unfrequently lengthy and involved; but in his discourses the sentences are designedly short and simple. He makes a large use of interrogation, and often deals in the Antithesis and Alliteration. Sometimes, but very rarely, he indulges in a felicitous quotation; equally infrequent are his resorts to anecdote. In aptness of illustration he has had few equals; but the illustration does not overlay the thought or interfere with the religious impression.

The work of M. Poujoulat is somewhat ambitious in title. It professes to depict the age and characterize the influence of the genius of Augustine. The author had been known previous to its publica-

tion, by various antiquarian and historical labours. He thus comes to the composition of the work before us with exercised habits of research. But occupation in other tracks of investigation could only indirectly qualify for the treatment of a subject so great as that which M. Poujoulat has undertaken. In Augustine, the African Church produced its greatest son; and in him Latin Christianity exhibited its most distinguished name. The Western Church in general, the African Church in special, must then have been the objects of prolonged and matured study before any one can satisfactorily appreciate the Bishop of Hippo. This book is the result of a study of Augustine, apart from preceding and contemporary writers. How long the composition occupied M. Poujoulat he has not told us; he speaks generally of "having lived long in thought with St Augustine, with the persons and the affairs of his time;" but evidently his knowledge of the Ancient Church lacks completeness and maturity. There is somewhat of national exclusiveness in his references to preceding authors. He never looks across the Channel, or across the Rhine. All the modern works he quotes are French. He is a member of the ultramontane party, now dominant in the Gallican Church, but a comparatively cautious one. In his volumes we are happily free from the credulity of Chavin de Malan, the virulence of Audin, and the controversial audacity of De Maistre. In the present temper of French Romanism, a book could hardly be published without a fling at Jansenism and Protestantism as equally bad; but the sentences which offend in this way are few, and need not irritate the reader. The work receives life and colouring from brief but forcible pictures of the various localities mentioned,—for M. Poujoulat has travelled over Algeria, with especial reference to the greater completeness of his book. The work is needlessly swelled by digressions; thus we have Sallust quoted in his description of the dwellings in Africa, which is much as if a writer wished to illustrate the state of England during the Wars of the Roses by references to the Saxon Chronicle. There is also a want of proportion in his History of St Augustine. Some of the Bishop's smaller works are analysed in needless detail, while a sentence or two is all that is given to the Discourses on John's Gospel—his most important contribution to the exposition of the New Testament.

It was natural enough for a French writer, especially one who had crossed the Mediterranean, to embrace or make opportunities of referring to the conquest of Algeria; but national vanity has surely reached its climax, in the supposition of M. Poujoulat, that the dying hours of Augustine may have been consoled by looking across the dreary ages of Vandal oppression and Mohammetan tyranny, to the time when Africa, delivered from its long darkness, should recommence the Christian life under the protection of the standard of France!

M. Poujoulat cannot be said to have cast any new light upon the great theme he has chosen; but he has given to the general reader a work readable in style and moderate in compass. He speaks dis-

dainfully of contemporary French literature; but there is nothing in this book to warrant his thus seating himself in Aristarchus' chair.

Of a much higher character is the first of the German works on our table. Dr Bindemann has rightly estimated what was due, alike to his subject and to himself. He has not hurried into the arena of authorship. Several years have elapsed since the first volume of his work was issued, and the third is still delayed. The two volumes before us contain the life of Augustine, until his election as bishop in 395; somewhat more than half of his life, measured by years, but a comparatively small portion of it, measured by intellectual and ecclesiastical exertions. Dr Bindemann has adopted a chronological treatment of his subject; the easiest undoubtedly, but perhaps not the most satisfactory. Even from this, however, he is compelled to deviate. Thus half of the second volume is occupied with a description of, and very numerous extracts from, the sermons, of which only a few were preached during the presbyter period of Augustine's life. Thus we have the most constantly exercised activity of the bishop treated exhaustively before we come to any mention of his appointment as bishop. It might have been better to have pursued the plan of Hasse, in his work on Anselm, and gone over the whole of the life, before treating specially of the writings. This, however, is at most a matter of arrangement.

Dr Bindemann has taken much pains in the treatment of the important questions, which succeed one another as his theme opens out. The student will find the chapters upon Manicheism in the first volume, and upon Monachism and Donatism, in the second, most ample and satisfactory. The historian feels his responsibility, and preserves accuracy in fact, while he adheres to judgment and candour in reflection. In the quotations which he has given from Augustine, he has aimed at strict fidelity; even the repetitions and other faults in style of the original are literally preserved.

"Augustine," says he, "knew no more delightful employment than either alone, or in the company of like-minded friends, to occupy himself with the investigation of the truth of God in the Holy Scriptures. When he exercised his office as preacher, or by word or pen combated those views which appeared to him dangerous deviations from church doctrine, he felt alike the responsibility of his office and the pain of the conflict he had to wage. But when he was set free from this outwardly directed restless activity, and had the pages of Holy Writ open before him, then he experienced the enlightening and quickening power of Divine revelation, and derived fresh motive and power for each exercise of duty in the truths thus vividly brought before him." At the same time, Dr Bindemann has plainly dealt with Augustine's Expository deficiencies, and especially that fondness for mystical interpretation, which, while it never explains away historical fact in Scripture, yet sees too often in a mere textual difficulty a "mystery," tenderly to be handled, and unquestioningly to be received.

Perhaps the author may be reserving it for his concluding volume;
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but as yet, he has not given us a view of the state of religion and morals in the African Church in Augustine's time. That must often have grieved the Father to the heart. Without dwelling too much on such statements (and they are not infrequent), as that there are few at the House of God, and those who did attend, were somewhat impatient listeners, there is too plain evidence in the sermons and epistles of the degeneracy of the church. Manicheism was on the wane, and in the country, in general, Paganism was thoroughly in a state of decay; but the Catholic Church was in a deplorable state. We are accustomed to hear much of drunkenness and "the great social evil," in our day; but offences against sobriety and chastity were far more prevalent then than now. Some suspicion may attach to a writer like Salvian, as if he wanted to make out a case; but none can attach to the reluctant witness of Augustine.

Dr Bindemann might also have adverted to the influence of Tertullian over Augustine. That daring and intense writer, from whose pages a larger proportion of striking sayings may be quoted than from any other father, is not often mentioned by Augustine; and when quoted, it is for the purpose of refutation. Yet, though Augustine has been guided by Cyprian and Ambrose in his church system, neither the one nor the other gave him the intellectual impulse communicated by the author of the "Apologeticus."

The little book of Dr Schaff was originally a series of articles in a religious magazine, and is intended for popular circulation. It is addressed to "the friends of the Kingdom of God;" and, as the preface tells us, is designed to contribute somewhat towards making church history available for general religious edification. The materials of the book are largely drawn from the "Confessions;" and hence the life of Augustine, before his conversion, is drawn out in far greater detail than his post-baptismal and ecclesiastical history. Though a small book, it is far from a superficial one: while it communicates information, it stimulates thought. It bears throughout the impress of thorough acquaintance with ancient and modern Church History. We quote a sentence or two from his estimate of Augustine:—"He is of all the Fathers the most evangelical, and therefore the most Protestant, and hence is explained the great veneration which the Reformers cherished towards him and the Protestant Church has ever since maintained. In the midst of the forms of the great Catholic organisation, which he identified with historical christianity itself, he had a heart penetrated by the deepest spirit of the Gospel, and cherished the most lively consciousness of the depth of human sinfulness, and the necessity for the interposition of Divine grace. Experimentally, he passed through the evil of self-knowledge to the blessedness of the knowledge of God. None of the ancient writers have with such power of thought and variety of illustration, examined, developed, and enforced the co-relative doctrines of sin and of grace." He quotes with approbation the remark of Böhringer, that "Reformation, Middle Ages, and Antiquity have equally a share in Augustine."

IV.—*A Review of the Progress of Mathematical and Physical Science in more Recent Times, and particularly between the Years 1775 and 1850 ; being one of the Dissertations prefixed to the Eighth Edition of the "Encyclopædia Britannica."* By JAMES D. FORBES, D.C.L., F.R.S., Professor of Natural Philosophy in the University of Edinburgh. Edinburgh : A. and C. BLACK.

WHOEVER undertakes to write the history of Science will find the task beset with difficulties. It is not a work by which he can expect to fascinate, or even interest his readers. Unlike the history of a great empire, whose plots and wars and revolutions delight or awe the imagination without straining the understanding, the record of a discovery in science, which may spread civilization to the darkest regions of the globe or increase tenfold the social enjoyments of man, is generally made up of dry details. The result of all great discoveries is the supply of human wants or the removal of human imperfections ; the process by which they are reached cannot be understood without close thinking, if not many years of preliminary study. The discovery itself may be made plain to a child ; the knowledge of the path which the discoverer trod to gain his end is usually confined to a few. Kepler's long-continued battle with the 8' in the motions of Mars has led to results of the greatest value and simplicity ; Watt's "little tin cylinder" proved the root of a tree, whose trunk has grown and whose branches have spread till there is scarcely a nation on earth which does not rejoice in its shadow ; but how few have mastered the principles of their discoveries ? It is impossible therefore that a history of science can ever be more than "very readable." It may be useful to the student, but it will never please the idler. It will be taken up as a book for hard reading, not for a leisure hour. The historian of science finds most of his readers in a section of the highly educated class, who, without engaging deeply in scientific pursuits themselves, desire information on the progress of science. But though the audience may be small, their minds are cultivated and critical. If the historian discharges his duty, he will enjoy the satisfaction of having gratified men who are both competent to judge of the merits of his work and disposed to make due allowance for its shortcomings.

The period in the history of science which Professor Forbes has reviewed extends from 1775 to 1850. A more difficult task could scarcely have been undertaken. The period embraces the highest triumphs of the astronomer in developing the theory of gravitation, the most profound researches into the nature of light and heat, and the rapid advances of the modern science of electricity. But the discoveries made in these sciences during the last century are least susceptible of a popular treatment, at least from writers who aim at a just exposition of the difficulties and triumphs of scientific inquiry. They have tasked the highest powers of the mathematician ; experiment itself has become technical. The difficulty of selecting the

salient points in a voluminous history is small, compared with the difficulty of clothing the abstrusest technicalities in language intelligible even to educated men. The historian of an empire requires to make a selection of facts; the historian of science, besides discharging that duty, must also explain the unknown to his readers. Professor Forbes has performed the latter of these labours with the clearness and precision for which he is distinguished. He has brought to the task a breadth of view which few scientific men are in a position to take, and a freedom of treatment due not less to his duties as a teacher than to a comprehensive grasp of the whole subject. But it must be confessed, that familiarity with the various departments of Natural Philosophy, or unwillingness to leave anything of importance unrecorded, has sometimes led him into details for which few readers will be grateful.

Various judgments will be passed on the selection he has made among the immense mass of materials which he had to digest and arrange. Scientific men, in their eagerness for fame, are not always just to one another; but Professor Forbes has discharged his task with the impartiality that becomes a historian. It would certainly not have detracted from the merits of the dissertation, if, in recording the progress of science, mere probabilities had been left to the oblivion that awaits them, or allowed to ripen in due time into authenticated laws. But the learned author has not always done this. The last six lines of the dissertation form an instance in point.

It has been well shown by Dr Whewell, in his "*History of the Inductive Sciences*," that the history of a great discovery may be separated into three important stages. In the first, a number of inquirers lay the foundations on which original genius builds its discoveries in the second: The former of these periods Dr Whewell calls the prelude to an epoch; the latter, the epoch itself. Galileo, Kepler, Picard, and others, laid the corner-stones on which Newton built the theory of universal gravitation. Had the former not laboured, the latter could not have built; the want of Picard's measurement of an arc of meridian alone having kept back the publication of the theory for eighteen years, and led its illustrious author to fear that he had missed the truth. If that measurement had not been made, Newton might have been known only as the writer of a treatise on optics, and another on fluxions. But every epoch is succeeded by an important era, which Dr Whewell has called the sequel to the epoch. In the prelude, the seeds of truth are sown; in the epoch, they spring up to maturity: and in the sequel the fruits of harvest are gathered in. In the first, the labourers are few in number, but usually distinguished by originality and success; in the second, one or two men, whose history forms the turning point of a science from infancy to manhood, monopolise discovery and fame; but in the third, the ore-bearing strata having been reached, and shafts sunk to them from many points at once, the number of labourers vastly increases, though their success is inversely as their number. It is evident that this mode of treatment, though plausible in theory, must limit the views taken by the

historian of the relations in which discoverers stand to one another. It may have the effect of unduly exalting some at the expense of others. It may hold true in the mechanical sciences, but it affords too narrow a basis to work on in others. Professor Forbes has followed a different plan. "The end at which," he says, "I have aimed, is to select the more striking landmarks of progress in each subject in each age, and endeavour to connect them with the character and position of all the more eminent discoverers, thus conveying to the general reader sufficient information on the limited number of particular subjects discussed, and interesting him not only in the science, but in the individuals. Then, by a few slighter touches only, and the mention of some secondary names, to connect with one another these brighter periods of eminent progress, in which every country and every age feels a just pride." At the same time, "he introduces the reader to the intellectual acquaintance of the eminent men who are selected for notice," an addition to the proper subject of the dissertation which relieves the tedium of merely technical details.

The three quarters of a century reviewed in this dissertation, contain all the periods into which Dr Whewell has analysed discovery. From 1775 to 1800, the foundations of future discoveries were laid, several important laws were brought to light, and especially the harvest which Newton had sown in astronomy still continued to be reaped. But from 1800 to 1825, all the branches of science, except physical astronomy, made such strides, "as no preceding time had witnessed." From 1825 to the present day, the number of labourers has been greater, but their success has been less than in the former epoch.

During the period reviewed in this Dissertation, Britain made greater progress in the application of science to art than in all the previous ages of her history put together. But there is something still more remarkable about this rapid development of engineering ability and practical skill. Before the middle of last century, the great public works of Britain, such as the draining of marshes and the building of bridges were often undertaken by foreigners. The country, unable to supply the talent requisite for these labours, looked to other nations for the minds that devised relief from difficulties, and for the machines necessary to carry their ideas into effect. A great change has taken place in these respects during the past century: a change which has exercised a lasting influence on the military, commercial, and political relations, not of this empire only, but of the whole world. The steam-engine of Watt, steam navigation on rivers and seas, canals, railways, and the engineering triumphs to which they led, are all embraced in this period; the men who imagined them, who overcame the difficulties that lay in the way, or manufactured the machines indispensable to success, were all Britons. Professor Forbes has judiciously inserted the records of these fruits of science in his Dissertation. They give a distinct view of the intensely practical character of the past century, besides forming a more than usually readable chapter in the history of scientific triumphs.

- V.—1. *The Gospel according to St John, after the Authorised Version.* Newly compared with the Original Greek, and revised. By Five Clergymen. London : John W. Parker and Son. 1857.
2. *The Epistle of St Paul to the Romans, after the Authorised Version.* Newly compared with the Original Greek, and revised. By Five Clergymen. London : John W. Parker and Son. 1858.
3. *The Second Epistle of Peter, the Epistles of John and Jude, and the Revelation.* Translated from the Greek, on the basis of the Common English Version, with Notes. London : Trübner and Co. 1856.
4. *The Epistles of Paul to the Thessalonians.* Translated from the Greek, on the basis of the Common English Version, with Notes. By the Translator of 2d Peter—Revelation. London : Trübner and Co. 1858.

THE question of Bible revision cannot be evaded or set aside. It has been taken up in so many quarters, and is being so seriously dealt with by men of mark, that the higher minds of English-speaking Christendom must entertain the subject in one aspect or another. Although the discussion is of comparatively recent origin, the literature to which it has given rise is already considerable. Pamphlets, tiny or large, articles in reviews, and bulky volumes, attest the interest with which the subject is regarded. That interest is not subsiding. But is it desirable that the proposal to obtain, if possible, a new and improved version of the English Scriptures should be hushed or overborne? Our views and wishes in the matter will appear from the tenor of the remarks which follow.

The four works, the titles of which are given above, owe their origin to the movement for an amended translation of the Scriptures. The first and second are set forth as "giving a fair specimen of the nature and amount of change which might be expected to be made, if the whole of the New Testament were to be revised on the same principles" as those on which this revision has been conducted. The third and fourth are contributions towards a new translation, which is being executed under the superintendence of the American Bible Union.

And first, as to the productions of the "Five Clergymen." Their statement as to the motives by which they were actuated, and the object which they had in view, may be given in their own words. After referring to the diversity of feeling which exists on the subject of a new version, and the exaggeration on both sides, they go on to remark :—"Refraining altogether from any expression of opinion respecting the desirableness of an authorised revision of the existing version, we have thought that the best method of allaying agitation, and enabling those who cannot examine the question for themselves to form a correct view of the real state of the case, would be to offer us faithful and complete a version of a portion of the New Testament as it was in our power to construct. In so doing, however, we have kept two objects distinctly in our view—the one, to exhibit in the fullest, most honest,

and most loyal manner, the actual meaning of the Inspired Word of God, allowing no subjective preferences or preconceived views to interfere with the simple and faithful exposition in English of the original text of Holy Scripture,—the other, to show, as far as is compatible with this first and chiefest object, that the authorised version is indeed a precious and holy possession, and that the errors of it are very slight and few in comparison of its many and great excellences." Everywhere are evidences of fine scholarly taste, nice discrimination, and an honest endeavour to reach a true and faithful rendering of the original. We have been struck with the improvement effected by the proper use of the article, and the more correct and expressive rendering of particles.

So far as these two books are concerned, the proposed changes of translation involving an alteration of the sense are comparatively few, and in no case do they affect the fundamental truth of the Word. Those in the Gospel of John are mostly to be acquiesced in. The more notable improvements may be specified. John v. 44, "How can ye believe, while ye receive glory one of another, and seek not the glory which is from the only God?" (*παρὰ τοῦ μόνου Θεοῦ*). John viii. 44, "He was a murderer from the beginning, and standeth not in the truth (*καὶ ἐν τῇ ἀληθείᾳ οὐχ ἔστηκεν*), because there is no truth ~~in him~~." This is both a more accurate translation, and agrees better with the statement in the remainder of the verse.

In their revision of the Epistle to the Romans, the "Five Clergymen" suggest some renderings which are decided improvements, whether they involve an alteration of meaning or not. Such are those of *χωρὶς ἔργων νόμου* in iii. 28 and iv. 6; *μακαρισμός* in iv. 9; *ἀγιασμός* in vi. 22; and *δικαίωμα* in viii. 4. In viii. 13, too, *μέλλετε ἀποθνήσκειν* is rendered, "Ye must die," which rightly indicates the impending doom of the carnally minded. Yet, here are some translations uncalled for and unjustifiable. *Θεοσυγείς* may be found in a passive sense in Euripides, and it is true that the divine hatred of men in any case implies hatefulness in them, but it is more consistent with the contextual epithets to regard it as denoting "haters of God." In iv. 17, *κατέναντι οὗ ἐπίστευσε Θεοῦ* is rendered, "before God, in whose sight he believed;" and in a note the revisers say, "We believe the grammatical construction to be *κατέναντι τοῦ Θεοῦ, κατέναντι οὗ*. But they produce no vindication of their opinion; and in the absence of this, we shall adhere to the authorised version, and continue to regard the expression in question as a case of grammatical attraction, confirmed by Matt. vi. 16, and Acts xxi. 16.

We turn to the other works on our list, and these we contemplate with less satisfaction. They are the production of a single author. Thus, while they contain a portentous display of learning, they illustrate the impropriety of sending forth unchecked the fruit of solitary labour in this department of study, and, by contrast with the works already noticed, the advantage of co-operation and counsel. We say nothing of the principles on which the translator has proceeded; but his attitude towards the received version may be judged of from the

following observation :—"Of the manifold excellencies, intrinsic and comparative, of that version, he trusts that he has now a more intelligent appreciation than before he undertook his present task, though, at the same time, he will be allowed to add, that, *so far as a judgment might be formed from the portion here reviewed*, he could much less readily now acquiesce in the opinion, that any other than a very moderate share of the world's gratitude is due to King James and his fifty-four translators."

Take a few specimens of this writer's *quasi* emendation. Here is an example of stiffness :—Our time-honoured version has, in 1 John i. 5, "in Him is no darkness at all," which this translator would render, "darkness in Him there is none." Contrast the following, the first being our version, the other the "improved" rendering :—"Whosoever abideth in Him sinneth not : whosoever sinneth hath not seen Him, neither known Him."—"Every one that abideth in Him sinneth not ; every one that sinneth hath not seen Him, neither known Him." The *ἀνθρωποκτόνος* of 1 John iii. 15, he would render "man-killer," while the "five clergymen" have no difficulty about retaining "murderer" in John viii. 44. In 1 John ii. 28 the authorised version has, "and not be ashamed before Him at His coming," the Greek of which is, *καὶ μὴ ὀσχυρισθῶμεν ἀπ' αὐτοῦ ἐν τῇ παρουσίᾳ αὐτοῦ*. The American translator is not satisfied, and would read, "and not be shamed away from Him at His coming." But which of those renderings best expresses the truth to the popular mind ? Then, is it not absurd refusing to translate *καθήμενοι*, in Rev. xi. 16, by "who sit ?" John is giving the narrative of what he saw, and the participle must be regarded as having the sense of the imperfect. Is it not hypocritical to render *μειλλόμεν θλίβεσθαι*, in 1 Thess. iii. 4, "we are to be afflicted ?"

We note the above as abortive attempts to set aside the existing translation in the case of the passages referred to, and as betraying something like unworthy hostility to that translation. There are many other cases in which the judgment of the critic seems at fault.

Hitherto we have spoken disparagingly of this elaborate performance ; but both quartos contain suggestions, which, although not new, are really valuable, and may be profitably pondered. There are a few improved renderings in 1 Thess. to which we may direct attention. In ii. 3, *ἐκ πλάνης* is translated "of delusion," which is confirmed by 2 Thess. ii. 11. Paul may be regarded as saying, "we are not ourselves deceived." The *μωχθος* of ii. 9 is rendered "weariness," and perhaps this conveys as well as possible the exhaustion of the Apostle, partly produced by his physical labours. Again, in ii. 13, it is certainly desirable to mark the distinction between *παράλαβamus* and *δέχομαι*. Might not the latter (as Calvin suggested) be rendered "embraced ?" "Accepted" is an improvement. Further, this writer is correct in his understanding of the connection of *διὰ τοῦ Ἰησοῦ* in iv. 14—"Those who fell asleep will God through Jesus bring with Him."

For the satisfactory execution of the task which these writers, working either singly or in concert, have assigned to themselves, in

order to the realisation of that on which so many hearts are set, a nearly perfect English Bible, certain high qualifications are required. There must be competent scholarship, including under this term not mere learning, familiar acquaintance with the criticism of all ages and countries, but a minute knowledge of the language under consideration, an insight into the affinities of language, and such a breadth of view and mental sympathy as enable the critic to comprehend the state of the Church and the world when the several portions of Scripture originally appeared, and to enter into the views and feelings of the several writers. Those, moreover, who would reach the full meaning of the Word, must be one in heart with Him who inspired it. And with all this, there must be freedom from bias, an honest desire to find in Scripture all that the Lord has put there, and a thorough willingness to have pre-conceived opinions set aside. Do men with such qualifications exist? We trust there are some such; but at this stage we deprecate any proposal to commit the work of revision to a body of biblical scholars, however eminent for piety, and attainments, and candour. The time has not come when that would be safe.

VI.—*Memorials of the Rev. John Love, D.D., consisting of Diary, Reminiscences and Original Papers.* 2 vols. 8vo. Glasgow.

It is upwards of a century since the subject of these memorials was born, and somewhat more than a quarter of a century since he finished his earthly career. But his memory still lives, and is cherished with profound respect and veneration by a large circle of serious and thoughtful Christians in Scotland. He was undoubtedly a man—as these memorials alone show—of an intensely earnest and elevated cast of mind; delighting to frequent not the courts merely, but the inmost sanctuary, of the spiritual and divine; capable also of tracing, in a distinct and graphic manner, the lines of his own consciousness respecting them, and of conveying deep and lasting impressions of what he experienced, to kindred spirits around him. We must not, therefore, wonder, that a desire should have been felt to obtain some record of his more private meditations and feelings; and it is with the view of meeting this natural desire, and at the same time diffusing clear and impressive exhibitions of divine truth, that the present memorials have been published.

It is now, for the first time, that the friends and admirers of Dr Love have had the means of becoming properly acquainted with the earlier stages of his course, and with the discipline through which his mind passed in acquiring its ultimate views of truth and duty. In this respect his mental history appears to have been somewhat singular; for, while in mature life, his style of thought was chiefly remarkable for its depth and gravity, in youth he was distinguished mainly for quickness and precocity of parts; and he even for a time espoused the shallower forms of Christianity, as most accordant with his intellectual habitudes and tastes. From this, however, he

recovered before he reached the close of his academical course; and while still little, if at all, above twenty years of age, we find him writing on the great themes of the Gospel, with the penetration and discernment of a man of grey hairs.

Judging from these memorials, the theological views and sentiments of Dr Love approached more nearly to those of Dr Jonathan Edwards, than any other writer; and his tone of thought and feeling was evidently a good deal influenced by both Edwards and Brainerd. Yet there was an independence of mind about him, which prevented him from slavishly treading in the footsteps of any earthly master; and as well in matters of speculative as of practical religion, he shows the freedom and vigour of a true spiritual thinker. Thus, on the oft-debated subject of moral necessity and its relation to the divine predestination, instead of making the one, like Edwards, the kind of correlate of the other, he expresses his belief in the perfect compatibility of any view of the natural actings of the will with facts of the Divine foresight and sovereignty.

“In order to maintain the doctrine of the Divine authority over the determinations of the human will, it is not necessary to deny that it has a self-determining power; because such a power it might have, and yet this power exert itself as the Lord pleases. Nor is it needful to suppose a necessity arising from motives; because this would imply that God has no other way of determining the will but by motives; which would be to say, that God has no power at all in the case—only the motives have. This Divine power exerts itself in a secret manner, yet so as, that it leaves room both for a feeling of liberty and for the reality of such a liberty, as shall justify his sentence of approbation or condemnation.”—(Vol. ii., p. 56.)

Profound and discriminating remarks of this metaphysico-theological description are scattered through both these volumes, which render them not without value to those who have a relish for the philosophical aspects of religion; although doubtless, statements occasionally occur, which will not stand a rigid examination. By much the greater part of the volumes, however, consists of matter strictly experimental and religious; detailing from diaries kept by the writer, and private papers, the exercises of mind, through which he passed in attaining to clear conceptions of Divine truth; his views and self-examinations, with reference to the ministry of the Gospel, and reflections on a great variety of topics, as well doctrinal as practical. The papers have been very carefully edited, and are accompanied by such explanatory statements as are required to make them perfectly intelligible. Perhaps a few of the passages, which treat a second time of the same topics, might have been advantageously omitted; but these are comparatively few; and the volumes, as a whole, certainly form a striking exhibition of the Calvinistic and deep-toned piety of Scottish evangelism as it was, at least, sometimes to be found, toward the close of the last century.

VII.—*Christian Errors Infidel Arguments.* Edinburgh, Andrew Elliot.

THE name of this book sufficiently explains its origin and purpose. The author's attention has been forcibly arrested by the fact, that scarcely any two writers who engage in the exposition or defence of Christianity, fail to contradict each other in some more or less important particular. With regard to the expositors of Christian doctrine this has long been obvious enough, and has come to be looked on as a matter of course. It is true, that almost all professing Christians, will admit the existence of a real Christianity beyond the precincts of their peculiar denomination,—will say that the various churches differ only in the smaller matters and are agreed in the greater matters of belief. But it is as true that, after saying this, each will combat with all the power that is in him, for his distinctive dogma, and will represent it as of fundamental consequence. All this is matter of every-day remark. And the author of the work above-named is singular, not in noticing it, but in pointing out one of its most calamitous effects. Is it so that, where two opinions contradictory of each other are advanced, while both may be wrong, only one can be right? And is it so, that contradictory opinions are advanced by Christians, with regard to almost every point on which Christianity is conceived to have any announcement? Then, it follows, that, *under the name of Christianity, there is current in the world as much error as truth.* And, in these circumstances, what is Christianity? What is truth? Such will be the question arising in thoughtful minds. So naturally do Christian errors tend to the production of scepticism.

It is not only, however, when we are asking, what are the specific teachings of Christianity, that such difference of opinion comes into view. When, putting aside that question for the time, we content ourselves with affirming the divineness of Christianity, or of that Record which makes revelation of it, and seek to give proof of what we affirm, contrarieties of view, quite as decided, make themselves evident. Each possible line of argument has its advocates and its detractors—those who affirm its validity, yea, who would risk the whole question upon it, and those who proclaim it naught. Thus, in the department of the evidences for natural religion, the “*à priori*,” and the “*à posteriori*” arguments—the arguments from design in nature—that from the moral nature of man, etc., are pitted against each other. And among the evidences for revealed religion—those based respectively on the miracles, on the adaptation of the Christian scheme to the wants of man, on the harmony between the moral teachings of the Bible and the moral standard which exists within the human breast—have all in their turn been eulogised, or condemned by some of the ablest Christian apologists. Hence, the powerful protest contained in the work, “*Christian Errors Infidel Arguments.*” The apologetics which come specially under the criticism of the author are—“*Christian Theism*,” by R. A. Thomson, Esq.; “*Theism*,” by Principal Tulloch; “*Infidelity*,” by Pearson; “*The Eclipse of Faith*,” and “*A Defence of do.*,” “*The Restoration of*

Belief;" and "*Bases of Belief*," by Edward Miall, Esq., M.P. He has little difficulty in showing that these apologists contradict each other in much, and that in not a little some of them contradict themselves. The discussion is conducted in the dialogue form; the interlocutors being "Origen," a representative of the ordinary run of Christian disputants; "Celsus," an accomplished and acute unbeliever; and "Theologus," one who has pierced through words and current phrases to the realities too often concealed by them, and who is able to speak with some authority on the things of God.

The subjects discussed are—"Truth and Error," "Knowledge and Belief," "Belief and Responsibility," "Mystery and Contradiction," "Practical and Scientific Knowledges," "Certainty and Probability," and "The Standard of Morality."

In the first of the dialogues, Truth, as the knowledge of that which is, having being distinguished from error, and from ignorance, or the mere absence of knowledge; the competency of reason to discover truth on all matters that come within the range of the human faculties, is affirmed. In the words of the author, "If a man fairly and earnestly seeks to know the truth on any topic whatever, he will either know that truth, or know that he does not know it." In the ^{second} dialogue, it is argued, that belief always rests upon knowledge; so that what a man knows, and that only, he believes. If so, faith and reason cannot possibly come into conflict. In the third, it is shown, that man is responsible not merely for his religious beliefs, but for all his beliefs. In the fourth, the distinction between a contradiction and a mystery is most ably stated. A contradiction emerges, when one proposition comes into direct collision with another, so that, if either be true, the other must be false. A mystery is not a thing absolutely unknown; for, it may be stated in a proposition. But there is mystery, when this proposition stands related to some other proposition in a way which cannot be apprehended; as also, when the thing affirmed in any proposition is known to exist, but the "how" or "why" of its existence is unknown. In Christianity, as in every system of truth, *there may be mysteries—there cannot be contradictions.* In the fifth dialogue, practical and scientific knowledges are distinguished from each other; the former is, "knowledge of an object in its relations to our own interests;" the latter is, "knowledge of an object in its relation to other objects generally."

Such are some of the contents of this book. The argument is throughout conducted in a most able manner—power of grasp and fineness of touch being singularly combined. There is no obscurity of statement—no eluding a difficulty—no timidity in stating deliberately accepted results. With regard to one or two points, we incline, indeed, to differ from the author. Thus, we think that his remarks on knowledge and belief tend to affirm not merely the uniform connection of, but the identity of, these mental acts; or, at all events, that he fails to discriminate between them in such a way as the common consent of men, expressed in all languages, demands.

We conclude by thanking the author for his work, and by commending it to all reflective men.

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